QUALITY OF CARE FOR REPRODUCTIVE TRACT MORBIDITIES BY RURAL PRIVATE PRACTITIONERS IN NORTH INDIA

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ABSTRACT

Reproductive tract morbidities are reported by more than a third of the population in India. In rural areas, practitioners without a formal medical qualification are likely to be the first point of care seeking for these. The aim of this PhD thesis was to contribute to the body of knowledge on quality of care by rural private providers in India. The main objectives were to 1) examine care-seeking for genito-urinary symptoms and community perceptions of provider quality, 2) evaluate rural providers' quality of care, and, 3) examine associations between symptoms, infections and psychological health of care seekers. A combination of qualitative and quantitative methods were used: focus group discussions, household interviews, observations of patient-provider interactions (60 providers; 367 patients) and laboratory investigations for common reproductive tract infections. Patients were also screened for possible psychological distress.

The study found that around 90 % providers did not possess a formal qualification but were a significant source of care provision. Providers' overall knowledge and practice of syndromic management was inadequate but these guidelines alone were inappropriate in relation to the care seekers's epidemiological and socio-cultural profile. Prevalence of infections in this population was low and some symptoms were associated with possible psychological distress. Communities' perceptions of genito-urinary illnesses were imbued with culturally influenced anxieties, that could potentially confound a clinical diagnosis. Providers too, commonly attributed symptoms to non-biomedical causes but persisted in dispensing biomedical drugs including antibiotics. Providers with a recognized qualification in an indigenous system of medicine displayed greater average technical skills than informally qualified ones, but both groups displayed similar knowledge levels. Knowledge was associated with technical performance at middle but not higher levels. All providers demonstrated moderate to high levels of interpersonal skills and these were strongly associated with increasing treatment charges. Providers were more likely to provide better technical quality to men and better interpersonal quality to women.

As private providers with diverse qualifications meet a vast proportion of basic health care needs in rural areas, they all must be strengthened to provide an optimum quality of basic health care. The public health system needs to recognize private providers as an important first rung of primary health care in rural areas and establish strong referral and other supportive links with them. Providers' knowledge and skills upgradation needs to be combined with concerted behaviour change communication targeted at rural communities and regulation of the pahramaceutical industry for providers' drug dispensing to be rationalized. Health services for genito-urinary problems need to be expanded to cover pathological as well as psycho-sexual etiologies and management guidelines revised and evaluated. Health related IEC campaigns must allay fears and anxieties related to masturbation and loss of genital fluids in men and local secondary schools must intitiate comperehensive reproductive health education for adolescents at the earliest.

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LIST OF ABBREVIATIONS

BAMS	Bachelor of Ayurvedic Medicine and Surgery
BHMS	Bachelor of Homeopathic Medicine and Surgery
BUMS	Bachelor of Unani Medicine and Surgery
BV	Bacterial vaginosis
CA	Candida albicans
CMD	Common Mental Disorder
CT	Chlamydia trachomatis
CISR	Revised Clinical Interview Schedule
FGD	Focus Group Discussion
FVU	First void urine
GCDWS	Garhwal Community Development & Welfare Society
GDP	Gross Domestic Product
GHQ	General Health Questionnaire
HIV	Human Immunodeficiency Virus
LAP	Lower Abdominal Pain
LMP	Licentiate of Medical Practice
NG	Neisseria Gonorrhoea
NGO	Non Governmental Organisation
OPD	Out Patient Department
PCR	Polymerase Chain Reaction
PID	Pelvic Inflammatory Disease
PPV	Positive Predictive Value
R , UR	Recognized , Unrecognized (providers)
RH	Reproductive Health
RMP	Registered Medical Practitioner
RTI/STI	Reproductive Tract Infection / Sexually Transmitted Infection
STD	Sexually Transmitted Disease
SES	Socio-Economic Status
TV	Trichomonas vaginalis

GLOSSARY OF HINDI TERMS

Aniyamit mahvari	Irregular menstrual cycle
Aspatal	Hospital
Baal tod	Hair pull
Bachchedaani mein soojan	Swelling in the uterus
Badi bimari	Major illness
Choti moti bimari	Minor illness
Dane	Small rashes on the skin
Dhat	Urethral discharge in men
Dhatu	Metal/vital substance
Dukhnas	Painful mosquito bites
Garmi rog	Heat disease
Gun	Quality
Gupt rog	Secret disease
Kamar dard	Pain in the back portion of the waist
Khos/Khujli	Itching
Mantar	A chant or a magico-religious prayer
Pait dard	Stomach ache
Peshaab mein jalan	Burning sensation during urination
Pucca road	Tarred road
Saab/sahab	Respectful deference to person of higher standing
Safed paani/safed pairua	White water or discharge from the vagina
Sarkari	Governmental / belonging to the government
Sikudan	Shrinkage
Thand	A cold due to low temperature
Tibbeti	From Tibet
Vaham	Fear / Misapprehension
Vaid	Ayurvedic practitioner
Yaar	Friend / Buddy

VILLAGE MADANPUR, UTTAR PRADESH, JULY 2001

In the midst of a cluster of thatched roofs sheltering meager possessions, a group of public health professionals are discussing health problems with the village women. As we leave, one of them pulls me aside. " Look at my daughter", she whispers, pointing to a pale and scrawny young girl, barely fourteen. "For the last 4 months she's been suffering from *safed paani* [white water]. Finally I took her to the doctor in the bazaar and he gave some medicines, but there's no relief". A thousand questions flood my mind.... What medicines... Does she have an infection... What does she eat... Where does she bathe.... What's her menstrual hygiene... Is there an abusive relationship...? Its late, we have to travel far and I am no doctor. I can only advise the mother to take the girl to the nearest government doctor, the very next day. But something in her expression tells me that she won't!

-Author's field notes, July 2001

Background and rationale for the thesis

This thesis set out to explore what happens when those who live in rural areas experience problems related to their reproductive organs and seek treatment for these from private rural practitioners, many of whom may not possess a formal professional qualification in medicine, such as the 'doctor in the bazaar' in the above anecdote.

This information is important and relevant for several reasons. In a recent workshop in India[1], experts involved in research on sexually transmitted infections (STIs) from different institutions in the country noted the declining numbers of patients with sexually transmitted diseases (STDs) in public sector facilities and called for more research to explore patterns of treatment seeking for STIs. The reasons for the declining numbers of patients in public facilities could not be explained by reductions in the occurrence of symptoms or infections; indeed recent empirical evidence from surveys and studies has highlighted the burden of symptom perception and reporting in India[2,3], especially among women.

Added to this are the increasing numbers of Human Immuno-deficiency Virus (HIV) infected persons in the country[4], who are likely to have high rates of STDs. Approaching the problem of STI care seeking from another direction, one finds that much of curative health care in India is provided by the private sector, on a fee-for-service basis[5]. It is also well known that in rural areas, much of this care is provided by practitioners who are not formally qualified to practice medicine but who, nevertheless, make up a larger segment of the private health care market than do qualified allopathic doctors or doctors formally trained in an indigenous system of medicine[6]. These informally trained providers are able to respond to the uniqueness of the health care market in rural India, but their technical standards of care fall short of the desired levels[7]. In a couple of unrelated instances, health scholars, activists and planners have debated ideas for improving the services of rural providers and recommendations have been plentiful[6,8]; however there has not been a comparable increase in empirical studies related to this sector that could build a strong and comprehensive evidence base to inform potentially successful interventions.

This scenario therefore formed the background for the thesis: that large numbers of people living in rural areas would be seeking care from rural private practitioners for problems related to their reproductive organs. Therefore it was important to obtain a comprehensive picture of the care that the practitioners provided, and suggest improvements if needed.

Lack of, delayed, or improper care for an RTI/STI can lead to serious complications, pain and at times social stigma for the affected persons. It is also established that STIs greatly increase the risk of HIV transmission[9,10]. Proper case management of STIs has therefore been advocated by WHO and accepted by the National AIDS Control Organisation of India (NACO) as one of the key strategies for HIV prevention in India. This explains the critical and urgent need for increasing the availability of good quality care for RTIs and STIs everywhere in the country, but raises another issue that also became central to this thesis. The acceptable clinical guidelines for STI case management in India have been adapted from WHO's recommended syndromic management guidelines. These provide the technical standards of quality for RTI/STI care. However, the effectiveness of these

guidelines, especially for treating vaginal discharge among women in low prevalence settings has been under considerable debate for some time now[11]. Health workers' clinical diagnoses made using the syndromic guidelines, have been found to differ markedly from the far more accurate aetiologic diagnoses made using reliable and standardized laboratory procedures[12]. Further confounding the accuracy and applicability of the syndromic guidelines is a growing body of psychiatric literature that has drawn associations between the common biomedical signs of an RTI/STI (e.g. a genital discharge), and the presence of a common mental disorder such as depression or anxiety[13-15].

Recognizing the problems associated with drawing valid conclusions related to quality of care in the absence of aetiologic information, this thesis also examined the possible etiologies behind the presenting complaints of men and women. It was anticipated that this information would provide a more accurate and complete picture of quality.

The aim of this thesis was therefore to contribute to the body of knowledge on quality of care by rural private providers in India and on reproductive tract morbidities, related etiologies and care seeking in rural communities. The findings are intended to be useful for any future strategies that seek to engage with and improve quality of care by the rural private health sector in India, and to review the existing syndromic management guidelines for managing RTIs/STIs in India. (For research questions and study objectives please see the Methods Chapter).

Study setting

This study was set in a rural area of North India. Tehri Garhwal district in the state of Uttaranchal was chosen for this study for its high burden of reported reproductive tract morbidities, high proportion of rural population, poor infrastructure (see Table II), challenges faced by the public health system, and the feasibility of working in the district with a suitable local partner.

With all of its technological advances, India is still a predominantly rural country. At the last Census (2001), 72% of the population was rural[16]. According to the international standard of $1/day poverty line, 44% of India's population is poor[17] and poverty is an enormous problem. Most of the poor live in backward and uneducated communities and in rural areas[18]. The financial impact of poor health and associated costs of health care seeking can push poor households into greater impoverishment[5]. Thus, measures to improve their health status combined with the availability of better quality and cost effective health services, can lead to overall benefits in the living conditions of the rural poor in India. At a future date, the findings of this study might contribute towards improving rural health services and the reproductive health status of the rural poor.

Tehri Garhwal district, where this study was located, belongs to the state of Uttaranchal, a predominantly rural and mountainous state in north India (see Appendix 1 for map of India showing Uttaranchal and Tehri Garhwal).

In November 2000, the federal government of India, conceding to a long-standing local demand, bifurcated the central Indian state of Uttar Pradesh and created a new state-Uttaranchal-comprising the hill districts of the original province. With a population of 8.5 million[16], Uttaranchal is part of the Indian Himalayan Region that spreads 2,800 kms across the states of Jammu and Kashmir, Himachal Pradesh, Sikkim, Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura, a part of Assam and West Bengal. The region is characterized by its rugged and undulating terrain, adverse climatic conditions, sparse and rural population, far flung small villages that are difficult to approach, small and scattered land holdings and inadequate transport and communication infrastructure[19]. Providing access to basic health services is a major challenge faced by the Health and Family Welfare Department of the state[20]. Not only is there a shortage of health facilities as per the government of India's norms (Table I a), but the state also faces a shortage of human resources to deliver health services. Table I b compares available health staff with sanctioned posts. Senior health administration officials partially attribute staff shortfall to the fact that many health providers are unwilling to stay in the hard-to reach areas of the state because of the lack of social infrastructure.

Table I a: Status of health infrastructure in Uttaranchal, 2001

Category of health institution	Requirement as per GOI norms	Existing
Sub-centre/main centre	2162	1609 (74%)
Primary health centers	324	257 (79%)
Community health centers	81	23 (28%)

Source: 'Access to Health Services in Uttaranchal', presentation by Health Secretary, Govt. of Uttaranchal, in the workshop on Health Policy Issues and Health Programmes in Uttaranchal, Mussoorie, 9-10 May, 2002

Table I b: Staff positions in Uttaranchal, 2001

Category of staff	Sanctioned posts	In Position (% of sanctioned)
Class-I Medical Officers	295	106 (36%)
Class-II Medical Officers (Male)	1187	476 (40%)
Class-II Medical Officers (Female)	147	92 (63%)
Dental Surgeons	51	23 (45%)

Source: 'Access to Health Services in Uttaranchal', presentation by Health Secretary, Govt. of Uttaranchal, in the workshop on Health Policy Issues and Health Programmes in Uttaranchal, Mussoorie, 9-10 May, 2002

Table II provides a comparative picture of 10 of the 13 districts of Uttaranchal. As the state was recently created in November 2000, disaggregated data for 3 districts were not available. Data presented in Table II were compiled from different sources, mainly from the Census and from demographic and RCH surveys similar to the NFHS survey (please see bottom of Table II for sources). These data have been used extensively to debate and discuss health policy issues in Uttaranchal state[20,21]. Tehri Garhwal has the largest proportion of rural population in the state of Uttaranchal (94%) and is one of the lesser developed districts in the state. Ninety percent villages in Tehri are small, with a population of less than 500, and 84% are not connected by *pucca* (tarred) roads, posing acute challenges for service delivery. Female literacy is among the lowest in the state. Importantly, the proportion of women who reported a symptom suggestive of an RTI/STI (57%) was found to be the highest in the state and was higher than the mean for Uttaranchal (41%) or India (39.2%).

Table II: Selected characteristics of districts in Uttaranchal (showing 10 out of 13 districts for which data was available; data sources at the end of the table)

District	Population 2001**	% of total population of the state**	% rural population**	% villages with <500 population µ	% villages not connected by pucca road #	% females literate **	% women reporting RTI symptoms¥
Hardwar	1,444,213	17	69	-	-	53	47
Uttarkashi	294,179	3.5	93	88	58	47	22
Udham Singh Nagar	1,234,548	15	Not available	Not available	26	54	48
Tehri Garhwal	604,608	7	94	90	84	50	57
Pithoragarh	462,149	6	93	91	70	63	34
Nainital	762,912	9	67	72	26	71	41
Chamoli	369,198	4	91	91	76	63	45
Almora	630,446	7	93	90	68	61	39
Pauri Garhwal	696,851	8	88	95	85	66	25
Dehradun	1,279,083	15	50	76	44	71	25
Uttaranchal	8,479,562	100.0	78.0	89	-	60	41

**Source : Census of India, 2001 (provisional information)
µ Source: Narayana, G.; Cross, H.; Brown, J.W. 1994. Family Planning Programmes in Uttar Pradesh: Issues for Strategy Development. CPDS, Hyderabad
Source: Census 1991
¥ Source: International Institute of Population Studies (IIPS). 1999. Rapid Household Survey under Reproductive and Child Health Project Phase I, 1998. Dissemination seminar sponsored by Ministry of Health and Family Welfare, IIPS, Mumbai

The author also had prior experience of working in the district with a hospital based NGO, the Garhwal Community Development and Welfare Society (GCDWS). The NGO, through its community outreach work was familiar with the entire district and provided exceptional local collaboration. This was another important factor for locating the research in this district.

Outline of the chapters in the thesis

The thesis is structured into 7 chapters:

Chapter 1 : Literature Review: includes a) a review of literature related to providers, quality of care and reproductive tract morbidities, and, b)a summary of the salient points and gaps in literature that lead to the research questions.

Chapter 2: Methods : includes the research questions and objectives, justifications and descriptions of the methods used to study the objectives, and details of the development and implementation of tools.

Chapter 3-6: Results Chapters: are a presentation of the results corresponding with the broad thematic areas defined by the research questions. These are described below.

Chapter 3: Health and care seeking in Tehri Garhwal: This chapter profiles the rural communities and describes their perceptions of illness, patterns of care seeking and decision making.

Chapter 4: Providers and quality of care: views of rural communities: This chapter presents the perspective of rural communities on the providers available to them and on providers' quality. Community perspectives are supplemented with quantitative data from the providers' mapping survey.

Chapter 5: Evaluated Quality: This chapter presents the evaluations of providers' quality in terms of its structure, process and outcomes, and identifies the provider level and patient level determinants of providers' technical and interpersonal quality.

Chapter 6: Symptoms of a reproductive tract infection? Findings from the survey of men and women presenting at clinics of rural providers: This chapter first presents an analysis and description of the socio-demographic factors associated with (a) symptoms, (b) infections and (c) psychological health, and then presents the associations between symptoms and infections and symptoms and psychological health.

Chapter 7: Discussion: This chapter presents a summary and discussion of the main findings of the thesis, the methodological limitations and provides recommendations for public health programmes and policy and for further research.

Chapter 1

LITERATURE REVIEW

The aim of this literature review is a) to identify gaps in the empirical study of quality of care offered by providers without a professional qualification in India, and, b) to pull together and describe the aetiological uncertainties related to reproductive tract morbidities in men and women that might confound their correct diagnosis and management.

The review is arranged in the following order: i) historical and contemporary perspectives on private sector providers and services in rural India, ii) significance and different dimensions of providers' quality of care, iii) a description of common reproductive tract morbidities in men and women, iv) issues related to the aetiologies of reproductive tract morbidities in men and women, and iv) a summary and description of information gaps that arise out of the literature review.

Methods used for the literature review included a systematic online database search and a manual search through bibliographies of selected articles/writings. 'Web of knowledge', 'PsychInfo', 'Pubmed' and 'Popline' were the electronic databases searched, using combinations of the following keywords: private, providers, practitioners, rural, health workers, health services, health systems, informal, non formal, sector, and indigenous practitioners. Historical archives and national or local Indian journals were sourced from the British and the Wellcome Trust libraries.

1.1. Historical and contemporary perspectives on the rural private health sector in India

For several centuries before the arrival of the Europeans and of Western medicine, India had a rich heritage of ancient systems of medicine[22]. The Ayurvedic system was based on the classic Sanskrit medical text 'Aurveda' (1000-500 BC);

the 'Yunani tibb' system was introduced by Arab traders trading along the Western coast of India in the seventh century AD[23]. These systems co-existed in syncretic proximity with each other and with other forms of healing such as folk-medicine[24]. Practitioners of these systems included the Ayurvedic vaids, unani hakims and a medley of midwives, bone-setters, exorcists and other types of specialists, who practiced their healing traditions across the length and breadth of India[22]. Together they constituted a vast body of private indigenous practitioners in India. Historical sources point out that with the rise of the Moghul Empire in India in the eleventh century AD, Yunani became the medicine of the ruling classes, while Ayurveda continued in the rural parts of the country and among the poor[23].

Western, 'cosmopolitan' medicine arrived in India with the European traders and by the beginning of the nineteenth century had gained a firm presence in the region. Traditional medicine was viewed favourably by the ruling colonial government initially, but gradually this support decreased and was withdrawn altogether in 1835[23]. Although traditional practitioners still provided care in the rural areas of the country, a number of Medical regulations between 1912 and 1917 took a negative stance against traditional medicine and made it illegal for a registered practitioner to be associated with Indian medicine. However, the rising Indian nationalist movement at this time provided a thrust for the revival of traditional systems of medicine. The revivalists struggled to bring traditional systems on par with Western medicine[25]. The results were two-fold. First, traditional systems were transformed into professionalized Ayurveda and Unani medicine. Its practitioners began to be trained in colleges, joined professional organisations and prescribed commercially manufactured drugs. They served government health agencies, worked in hospitals, wrote articles for medical journals and engaged in other 'modern' professional activities that the physicians of traditional medicine did not conventionally do. The government of Madras set up the first committee on Indian systems of medicine in 1923. Several years later a series of Bills were passed to govern different aspects of traditional systems: the Drugs and Cosmetics Act of 1940 regulated the standardization and evaluation of traditional drugs; the Indian Medicine Central Council Act of 1970 and

The Homeopathy Central Council Act, 1973, regulated the standards of education and practice in Indian Systems of Medicine and Homeopathy[26].

The second important result of the cross cultural medical encounter between Indian and Western medicine was the emergence of a popular-culture medicine, described vividly by Charles Leslie[24]:

> "Popular-culture medicine, emerges with the institutions of mass society: industrial production of medicine (drugs), advertising, the school system. It combines the humeral concepts of hot and cold foods with concepts of vitamins; traditional physiological concepts with the germ theory of disease; popular astrology and religion with faith in modern science and technology. It utilises patent medicines and drugs from modern chemotherapy, along with industrially prepared Ayurvedic, Yunani and homeopathic medications. Professional Ayurvedic and Yunani physicians, and many doctors trained in cosmopolitan medicine, practice for the most part a form of popular-culture medicine." -Leslie, 1976

Unfortunately, when post war India took its first steps to launch a public health system, the vast network of indigenous practitioners in the country was not taken into account. The Health Survey and Development Committee appointed in 1944 under the chairmanship of Sir Joseph Bhore, an eminent Indian civil servant, took a firm stand against making use of India's medical traditions or practitioners[27]. However, as the issue of indigenous systems was rife with political complexities, the Bhore Committee transferred the matter to another special Committee and then left it to the Provincial governments to decide what part the indigenous systems could play.

Post independence, the position of traditional medical systems strengthened in health policy and practice in India[28,29]. The Indian State followed an inclusive relationship[30] with indigenous systems wherein practitioners of allopathic and other systems of medicine were all officially recognized and rendered services through equal but separate systems, each conforming to its own standards and governed by separate Acts of Parliament. India's national health policies, drafted in 1983 and 2002, advocated for

increasing integration of Indian systems of medicine and its practitioners within the larger public health system.

The changing policy climate reclaimed and strengthened the national and global position of traditional medical systems. However, this thesis argues that only the codified and professionalized medical systems (traditional or Western) were ever taken into account. The reality today is that practitioners with a formal professional qualification in either traditional or Western medicine are inadequate to meet the health needs of India's one billion, largely rural, population[29]. At the latest count, there were 622,576 qualified allopathic practitioners registered with the Medical Council of India[31], and 681,124 practitioners registered with the Indian Medicine and Homeopathy Councils[32] a total of 1,303,700, or roughly 130 qualified doctors (including indigenous system trained) per 100,000 population. If only those qualified in modern medicine were taken into account, the ratio would reduce to around 62 doctors per 100,000 population. By comparison the United Kingdon has around 166 doctors per 100,000 population (1993 statistics) and the United States of America has 548.9 (year 2000 statistics)[33]. The problem lies not only with deficient numbers of providers. Studies have also reported that the majority of qualified practitioners in India work privately[34] and live in urban areas[35]. A provider survey[36] in Ujjain district of Madhya Pradesh found a much higher density of qualified providers in urban (1:2300) than in rural areas (1: 26,860), and a much higher density of unqualified providers in rural (1:968) than in urban areas(1:8279).

Three decades of rural health research in India have consistently documented that in villages there is a widespread presence of practitioners who do not have a professional qualification in any recognized system of medicine, indigenous or allopathic, but who practice a blend of different systems of medicine[6,7,37-40]. This vast reservoir of popular culture medicine and practitioners that provides a significant proportion of much needed health services to rural, low income and less empowered areas of the country, remains untapped, if not ignored and dismissed, by policymakers of the 21st century as it was by the architects of post independence India.

Low levels of public spending on health[29] (less than 1 % of the GDP) place India among the bottom 20 % of countries in health spending[5]. Private health spending, much of which is out-of -pocket, accounts for more than 80 % of all health spending. The private sector provides 79 % of outpatient care for those below the poverty line[5]. This situation calls for developing and testing partnerships for working with the rural private health sector which is likely to remain a major source of health care in India in the foreseeable future.

> "... ..now is the time to conduct big experiments throughout India's health care system, particularly since the status quo is leading to a dead end."
>
> -Better Health Systems for India's Poor, World Bank, 2002[5]

In order to engage fruitfully with the rural private health sector, a first step would be to understand how the sector functions and the nature and quality of services it provides. The next section of this chapter reviews the limited literature on rural health providers in India and identifies information gaps, some of which have been addressed in this thesis.

1.2. The nature and functioning of rural health providers in India

The formal private sector in India, consisting of professionally qualified providers, has been extensively studied with respect to its characteristics, quality, financing and other attributes[41-45]. There are fewer studies that bring a similar depth of inquiry to providers without a formal medical qualification.

Providers in rural areas of India are likely to be those who possess a formal qualification in an indigenous system of medicine (ISM), and an even larger proportion of those with an informal or unrecognized qualification or no qualification at all[6,38]. The latter is often referred to as the informal health sector[46] and it is this sector that has been found to be present in large numbers in rural areas, much more than providers with a recognized ISM qualification.

The author identified and reviewed 15 studies that provided substantial information related to informal private providers in India (and one in Bangladesh) (see Table 1.1). These studies provided salient information on rural providers from different regions of India: North, South, East and West. The majority documented the presence of informal providers[36,38,47,48], their practice characteristics[6,37,39,49] and highlighted the role of informal providers as an important source of care provision, at first contact, especially in rural and disadvantaged areas[6,50,51]. Clinical conditions for which informal private providers were reported to provide care included children's problems[6,7], tuberculosis[52], malaria[53] and reproductive tract infections[40].

Table 1.1. A review of studies of the non-formal private health sector in the Indian sub-continent

Authors/date of publication/Study location	Type of practitioners included	Study objectives	Key findings
1. Neumann et al[37], (1971), rural areas of Kerela (South India) and Punjab (north India)	'Indigenous Medical practitioners' (IMPs) identified with help from villagers, IMP associations and practicing IMPs	To study practitioners' background and practice characteristics	54% in Kerela and only 15% in Punjab had a diploma in an indigenous system (not clear whether recognized or not per 1970 Act). Nearly all had served apprenticeships for 2-5 years, in Kerela mostly with vaids and in Punjab with mixed system practitioners. Treated all types of illnesses. Diagnosis mainly based on sketchy illness history and some physical exam as checking pulse. Modern medicines commonly given in Punjab. 28% had newly entered the field suggesting that IMPs were not waning.
2. Chuttani et al[38], (1973), rural areas of Delhi, Haryana, Rajasthan, Uttar Pradesh and Madhya Pradesh	All practitioners practising curative medicine without a qualification in modern medicine	To find out the existing pattern and qualifications of rural private practitioners	230 practitioners surveyed: 7.4% had a formal ISM qualification, 27% had informal/unrecognized qualifications and 65.6% had no qualifications at all. A significant proportion practised allopathic medicine.
3. Taylor, Carl E.[39] (1976) rural areas in Punjab and Mysore	All indigenous practitioners in the study areas	To study background, type of care provided, medication given	Punjab: 59 full time practitioners, 300 spiritual healers and specialized practitioners (for specific conditions). Mysore: 656 practitioners but only 30 were full time and 7 registered. In both areas 80% of drugs given were allopathic.
4. Sarder and Chen[47], (1981), rural Bangladesh	All non-government health practitioners in a study population of 263,000	To survey the distribution and practice characteristics of practitioners	15% allopathic, 3% homeopathic, only 1.8 % were registered and were likely to have a recognized qualification. Other categories- kobiraj, totka and others formed the majority. Large proportion of female kobiraj and totkas.
5. Rohde & Vishwanathan[6], 1995. Their book is based on a review of several country studies, notably: -a 16 state study of care	For the studies of rural providers, all those village providers were included who were identified through interviews with groups of village women, particularly	Objective of the diarrhoea care seeking study was to ascertain practices related to home management of diarrhoeal diseases in	Major provider of rural health care for children's diarrhoea was the private practitioner. Majority had no formal training in any system of medicine; had served apprenticeships, but not necessarily with qualified doctors; 90%

Authors/date of publication/Study location	Type of practitioners included	Study objectives	Key findings
seeking for childhood diarrhoea in rural India (1986-87) -a 4 state study of rural private practitioners UNICEF/ 1988 (UP, W. Bengal, Gujarat, Karnataka) -3 state study of rural private practitioners Ford Foundation/1991 (Orissa, UP, Tamil Nadu) -study in rural UP - Options Project/1992/93	mothers	rural India. Objective of the providers' studies was to obtain a detailed description of the rural private practitioner.	prescribed/dispensed allopathic medicines, often in combination with indigenous medicines; mostly male; 36-39 years; mostly studied up to high school; practice was the sole occupation for around half the practitioners; patient load highest for those who practised only modern medicine; male patients outnumbered female patients; patients came from a radius of half a mile; common complaints were fever, respiratory, skin and gastro problems; dispensed repackaged medicine; majority gave medicine for just one day; charged mainly for medicine cost plus margin; retail chemists were main source of drug purchase; among people, most important feature of care seeking was the perception that past experience with a practitioner had resulted in a rapid subsiding of symptoms
6. Nandan, D[49] (1995), rural areas of Agra district, Uttar Pradesh	'indigenous medical practitioners'	To describe the practitioners and determine the potential for their involvement in certain national health programmes	70 IMPs; 73 % had 'some' formal qualification (study did not specify what qualifications or the criteria to determine formal); had poor knowledge about most government health schemes on diseases such as diarrhea, TB, blindness, but higher on family planning, malaria and immunization. Were keen to collaborate on national health programmes.
7. Chakraborty et al[51], (2000), rural Bihar	67 private practitioners without any formal professional qualification	To test 2 tools to improve providers technical quality of care: the verbal case review (VCR) for evaluating providers case management practices, and the INFECTOM for improving deficiencies noted in the VCR.	Providers case management improved. Especially significant was information for communities on expected quality standards and social contracts with providers. (Information on providers' drug dispensing not included in the study)
8. Lakshman & Nichter[54], (2000) Urban and rural Vellore, Tamil Nadu	All practitioners with private clinics who did not have an MBBS degree; included in the study were 20 PPs (out of 99) from Vellore town and 20 (out of 37) from rural areas within 15 kms	To study practitioners' injection hygiene behaviour.	Practitioners were young (median age 37 years); 19 identified themselves as ISM practitioners (Ayurvedic/unani/ homeopathic) while majority presented themselves simply as 'RMPs'; 90% patients received an injection; 65% specifically wanted an injection; disposable needles were available but reused often; many different chances of contamination were noted as infection prevention was poorly observed; most RMPs responded that needles could be cleaned and used at least 3 times.
9. Kamat, V.R.[53] (2001), Mumbai and Navi Mumbai, Maharashtra, India	48 Private for-profit practitioners:19 MBBS degree holders, 17 ISM degree holders, 12 other types of diploma holders (credentials not verified, but none of the diplomas had current recognition)	To document a group profile of practitioners and examine their role in the management of malaria during an epidemic situation	Practitioners found to practice irrational allopathic medicine, few used blood smear test, gave one-day treatment to poor patients, poor practice attributed to competition and the need to retain continued patronage of patients by meeting patient expectations

Authors/date of publication/Study location	Type of practitioners included	Study objectives	Key findings
10. Nagaraj, et al[40] (2001), a rural area of north India (not specified)	'indigenous medical practitioners' in a rural area	Study the practice pattern of practitioners for RTIs (by provider interview)	81 PPs found: only 69% properly registered (study did not specify qualifications). According to providers' reports, an illness history was main tool used to diagnose RTIs, majority used a mix of allopathic and Ayurvedic medicines irrespective of qualifications and knowledge regarding dosages was negligible.
11. Chakraborty & Frick[7], (2002), rural West Bengal	Private providers identified through interviewing mothers of under-five children	To assess technical quality of care for acute respiratory infections (ARI) in children.	None of the providers formally trained in any system of medicine. Case management was inadequate with important steps (checking respiratory rate and chest in drawing) missed out. High usage of inappropriate medication (allopathic). Poor performance was linked to poor knowledge. Within-provider variation in disease management was related to number of patients seen per month.
12. Anandhi et al[52], (2002), rural areas of Haryana stat e in north India	'Indigenous medical practitioners' (providers with an ISM qualification and those informally trained)	To assess providers knowledge and practice related to Tuberculosis (through provider interviews)	Only 20% had a graduate degree in Ayurvedic medicine. Providers commonly attributed TB to alcohol and smoking, only 17.6 reported infection as the cause. 61% based diagnosis on symptoms, 38% used diagnostic tests. Anti TB drugs used were isoniazid, rifampicin and streptomycin, but none knew correct regimens.
13. Banerjee et al[50], (2004) rural Rajasthan	All private facilities mentioned in village household interviews	Study health and economic status as well as public and private provision of health care in the rural study setting.	72 providers (study was ongoing): 41% did not have a medical college degree, 18% had no medical or paramedical training, and 17% had not completed high school
14. Kumar [48](2004), districts Rohtak and Bhiwani in Harayana state in north India	All public and private services, including 'RMPs' (Registered Medical Practitioners)	Locational analysis of healthcare services between 1981 and 1996	Geographic access to both public and private facilities improved from 1981 to 1996, but locational efficiency* of services did not improve; developed areas continue to attract more healthcare services, both public and private, than less developed ones.
15. Deshpande et al,[36] (2004), all parts of Ujjain district in Madhya Pradesh	All private providers in the district, formally and informally qualified	To survey, characterise and create a GIS database of providers	2075 full time PPs: 56% untrained. 88% of qualified doctors were in urban areas and 72% were in Ujjain city itself. Informally trained were concentrated in rural areas. Higher density of qualified providers in urban areas(1:2300) than in rural areas (1:26,860), while density of unqualified providers was much higher in rural areas (1:968) than in urban (1:8279). Overall the provider density of PPs was higher in rural than in urban areas.

Notable among studies reviewed was Rhode and Vishwanathan's[6] review of several national level studies including a 16 state study which provides a closer look at the practice characteristics of this sector. The authors found that informal private providers were very similar across the different states of India in their background and practice characteristics and were also the preferred source of care for childhood diarrhoea, for

more than 80% of rural Indian families. The majority of these providers were male, 97% had attended school, 49% had attended college, but none of the providers in this study had any formal training in medicine. Instead most had acquired their knowledge and skills by working as assistants of qualified allopathic doctors in the formal sector. On average the providers had about 14 years' experience in providing health care. All dispensed drugs directly to patients, and this was their main source of income. The majority of these practitioners practiced an eclectic blend of allopathic and non-allopathic medicine.

Studies that have explored reasons for people's choice of care seeking have found that factors responsible for the popularity of the informal sector include the providers' availability, accessibility, confidentiality and respectful attitude, lower costs (of travel, waiting time and availability of drugs) compared to public and other private health facilities, loan based treatment, and patients' belief in the effectiveness of providers' medicine based on previous care seeking encounters[6,49].

Only two studies had examined provider quality in substantial depth using interviews as well as patient observations: one study[53] focused on malaria and the other study[7] on acute respiratory tract infections in children. Both of these limited themselves to studying providers' technical quality of care.

Chakraborty's study of the technical quality of providers for acute respiratory infections in West Bengal, used WHO criteria to assess technical quality of care for ARI. The study found technical quality to be inadequate. The problem was related both to low levels of performance due to poor provider knowledge and inconsistency in performance. The study on quality of malaria care provided by qualified as well as informal providers in Mumbai[53], found that treatment practices of a majority of practitioners were not consistent with WHO guidelines and providers were driven primarily by the need to retain the patronage of patients.

To summarise, providers without a formal professional qualification have long played a significant role in provision of curative health care in rural and disadvantaged areas of the Indian sub-continent. It is important to engage with them in meaningful ways in order to improve population health outcomes and this requires a coherent understanding of the sector, especially of the quality of services that it provides. The current body of literature offers limited information towards this understanding.

The following section on the significance and construct of quality highlights the encompassing nature of quality that addresses other issues beyond the technical/clinical. With the rural and non-formal private health sector it is crucially important to examine quality issues beyond just the technical, since much of their popularity has been found to stem from other factors such as accessibility and low costs and good interpersonal relations. At the time of this study, few studies were known that had systematically assessed other quality issues besides providers' technical quality of care. This thesis attempts to fill in some of the existing information gaps on quality research related to the rural and non-formal private health sector in India.

1.3. Quality: significance, definitions, and measures

Quality holds special significance in health systems and health services today. Many countries in the North[55-57] and a few in the South[58,59] have experimented with and put in place different strategies for quality improvement. Concerns related to quality of heath care arose as a result of declining quality of health services in many low and middle income countries caught in the economic recession of the 70s and 80s[58,60] that led to a decreasing resource base for social services. Simultaneously, in the 80s and 90s, a growing body of work on quality of health care, especially in family planning services, recognized its central role in the health outcomes of populations[61,62]. In June 2000, releasing the World Health Report, the WHO Director General Dr. Gro Harlem Brundtland said:

> "The main message from this report is that the health and well-being of people around the world depend critically on the performance of the health systems that serve them"[63]

The World Health Report 2000, also recognized quality health care as a human right, and called for "delivery to all of high-quality essential care, defined mostly by criteria of effectiveness, cost and social acceptability"[63]. Finally, research has also documented that client perceptions and evaluations of quality play a significant role in influencing utilization of services[64] as well as adherence and compliance with treatment. This has been uniquely demonstrated in research related to family planning services[65] where perceived good quality of services has been found to be associated with greater likelihood of method adoption and continuation by women.

Thus, over the last two decades or so, efforts at defining and measuring quality have recognized the role of client perceptions and views[62,66-68]. Quality definitions and parameters have not been limited to clinical or technical quality alone, but have also included issues of costs, access and organizational functioning[69] besides client perceptions, preferences and priorities[70]. Donabedian's and Bruce's writings are the earliest representations of this holistic conceptualization of quality. In 1988, Donabedian first suggested that there was more than one legitimate way to define quality, depending on "where we are located in the system of care and on what the nature and extent of our responsibilities are". Donabedian recognized that quality issues existed at the level of providers, patients as well as communities and that two quality elements were important in the performance of practitioners: one technical and the other interpersonal. For assessing quality, Donabedian proposed 3 important informational categories: Structure (denoting resource attributes, e.g. facilities, equipment, personnel), Process (denoting the giving and receiving of care) and Outcome (denoting the effect of health care on the patient's health status and satisfaction)[61]. A few years later, Bruce expanded Donabedian's framework and suggested that questions on structure and process should be asked with reference to six key elements of quality: choice of method, information given to users, technical competence, interpersonal relations, follow up mechanisms and constellation of services (accessibility and acceptability of services)[62].

Definitions of quality have used a descriptive or a prescriptive approach[71]. The quality concept can be used to describe the relationship between possibilities realized and a normative frame of reference on the one hand, and to prescribe or recommend a certain form of this relationship, on the other. A descriptive approach exemplifies the meaning of quality as a property. The prescriptive approach exemplifies the meaning of quality as a category of judgment. Combining the descriptive and prescriptive approaches is a 1990 definition of quality from the Institute of Medicine, Washington, D.C[72,73] which was developed following an extensive review of literature: "Quality of care is the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge".

Multidimensionality is another key aspect of the holistic nature of quality[74]. This has found expression in programs to measure quality of health care. Multidimensionality recognizes the fact that quality can exist and be measured from the perspective of providers of health care, users of health care as well as health care managers or health authorities that are in most cases represented by the state. In writing about these different dimensions of quality Maxwell proposed another framework to define and measure quality:

Effectiveness: Is the treatment given the best available in a technical sense?

Acceptability: How humanely is the treatment given? What does the patient think of it?

Efficiency: What is the cost effectiveness of the service/treatment?

Access: Can people get this treatment when they need it? Are there any barriers?

Equity: Is this group of patients being fairly treated relative to others?

Relevance: Is the overall pattern and balance of services the best that could be achieved, taking account of the needs and wants of the population as whole?

Maxwell's framework suggests that different dimensions of quality could be of importance to different actors in the quality setting, although with obvious overlaps. Thus while acceptability and access would be important for users of health care, assessing effectiveness of treatment would be important from the providers' perspective and the concerns of health authorities would lie with issues of efficiency, equity and relevance.

As summarized in the previous section, this thesis is an attempt to understand quality issues related to the rural and non-formal private health sector, from a multi-dimensional and holistic perspective, and in a systematic way. Few studies have addressed provider quality in this way. The quality framework and perspective used in this study to assess quality of care is described and argued in more detail in the next chapter on Methods, under section 2.3.2.

The following section consolidates relevant issues related to reproductive tract morbidities in men and women and locates the rural private providers within this clinical scenario which formed another important concern of this thesis, besides quality of care.

1.4. Reproductive tract morbidities in men and women

Significance

Symptoms suggestive of problems of the reproductive tract are among the most common health problems in women in developing countries[75], particularly in South Asia[12,76]. In their extensive research in Karnataka in South India, Bhatia and Cleland found that reproductive ill-health accounted for half of all illness days and for 31 % of total curative health expenditure[76]. Other community surveys in India, including the second round of the National Family Health Survey, have found that one-third to nearly half of all women report such complaints[2,77,78]. In men, psycho-sexual concerns and semen loss related anxieties have, in addition, been found to be major pre-occupations, adding to their overall burden of perceived and reported reproductive health morbidities[79].

The significance of reproductive morbidities is directly linked with their social, economic and physical consequences. Morbidities associated with the genital/reproductive organs (also referred to as gynaecological morbidities in women), whether perceived or due to an organic cause, can be associated with a large magnitude of disability and related costs of care seeking[76,80], as well as emotional distress and social ostracism. Of even greater concern are their pathological etiologies, particularly the presence of a reproductive tract

infection, perhaps a sexually transmitted one. If left untreated, RTIs, and particularly STIs, can cause pelvic inflammatory disease, chronic pelvic pain, abortions, premature rupture of membranes in pregnancy, still birth, ectopic pregnancies and infertility[75]. It has also been documented that the presence of STIs increases the chances of HIV transmission[9] and that effective control of STIs could lead to a substantial reduction in HIV transmission[81].

Reproductive morbidities and reproductive tract infections

Commonly occurring and frequently reported symptoms of a reproductive morbidity include an abnormal genital discharge, burning or painful micturition and lower abdominal pain. Biomedically, these signs and symptoms in men and women are considered suggestive of a reproductive tract infection, perhaps a sexually transmitted one[82] (RTIs/STIs).

Reproductive tract infections (RTIs) comprise 3 types of infections with overlapping symptoms and signs[10,75]:

-Endogenous RTIs are usually not sexually transmitted and often occur spontaneously. Common types include Bacterial vaginosis and Candida albicans infection, presenting with symptoms of vaginal discharge and itching.

-Sexually transmitted infections (STIs) include gonococcal and chlamydial infections, which present with genito-urinary discharge but are often asymptomatic. Vaginal discharge caused by Trichomonas vaginalis infection is usually sexually transmitted as well. Other STIs include genital ulcers, which in India are often caused by Herpes simplex virus type II, syphilis and chancroid.

-Iatrogenic RTIs are the result of medical procedures such as the introduction of intrauterine devices or abortions under non-sterile conditions.

The syndromic approach for management of RTIs/STIs, recommended by WHO[83] for use in low resource settings with inadequate diagnostics, relies upon commonly occurring symptoms such as an abnormal genital discharge, painful or burning micturition lower abdominal pain, for diagnosis and treatment of the underlying common infections. However, recent evidence has questioned the appropriateness of the syndromic approach in low prevalence settings, as the association between infections and common signs/symptoms has been found to be a weak one[11,12,84].

Studies of RTIs/STIs in India and neighbouring Bangladesh, using standardized laboratory methods, have found low overall prevalences of infections in the general population, particularly among women. A review of recent research on infections in women in the community and gynaecological OPD settings showed the following prevalences: Chalmydia-0.5%-12.2%; Gonorrhea-0.0%-1.9%; Trichomoniasis-0.5%-10.5%; Bacterial vaginosis-13%-26% and Candidiasis-0.9%-25%[12,14,84-86]. There are relatively fewer surveys of reproductive tract infections in men[87]; two recent ones, nonetheless, also detected low levels of Chlamydia (1.1%-2.2%) and Gonorrhea (1.7%-5.4%) in a community setting[88] and an STI clinic setting[89]. No standardized studies of trichomoniasis in men in India could be located.

To summarise, in low prevalence settings as the ones described above, frequently reported genito-urinary symptoms do not always carry an underlying infection. Thus, if syndromic management guidelines were to be used alone to alleviate such symptoms by treating for underlying infections, they could lead to considerable over treatment and uncertain outcomes.

Other causes of reproductive tract morbidities

There could be many other reasons why men and women perceive and report an 'abnormal' genital discharge. Biomedical literature classifies a genital discharge as physiological (e.g. age or hormonal factors related) or pathological (see Table 1.2.) A pathological discharge could be infective, as described in the previous section (e.g. due to

Gonorrhea or Chlamydia), or non-infective (e.g. due to an allergy or an intrauterine device).

Table 1.2. Non-ulcerative genital diseases in men and women

	Men	Women
Signs and symptoms	Urethritis: spontaneous discharge of fluid from the urethral meatus, often accompanied by burning discomfort during urination (dysuria)	Vaginal discharge with or without vulval irritation
Common causes	<u>Physiological:</u> Spermatorrhea Prostrateorrhea Sexual stimulation <u>Pathological:</u> Gonorrheal infection Chlamydial infection Non-specific urethritis (unknown etiology?)	<u>Physiological:</u> Age, hormonal factors, local factors like personal hygiene, and possibly psychological factors (Irving et al, 1998) can influence physiological discharge in women <u>Pathological:</u> Infective discharge: Candida albicans infection Bacterial vaginosis Trichomonas vaginalis infection Chlamydia trachomatis infection Neisseria Gonorrhea infection Acute pelvic inflammatory disease Post operative pelvic infection Post abortal sepsis Puerperal sepsis Non-infective discharge: Retained tampon or condom Chemical irritation/allergy Ectropion Endocervical polyp Intrauterine device Atrophic changes
Less common causes	<u>Pathological:</u> Ureaplasma urealitycum infection Mycoplasma genitalium infection Trichomoniasis Secondary to intraurethral lesions (herpes, chancre, warts) Miscellaneous bacteria (E.coli) Secondary to other genitourinary conditions (e.g. Pyelonephritis-a urinary tract infection) Physical and chemical trauma and foreign bodies	<u>Pathological:</u> Infective discharge: Human papillomavirus Primary syphilis Mycoplasma genitalium infection Ureaplasma urealyticum infection E. Coli infection Non-infective discharge: Physical trauma Vault granulation tissue Vesicovaginal fistula

	Allergy Reactive arthritis, Reiter's syndrome and allied conditions	Rectovaginal fistula Neoplasia

Sources: [90-92]

Table 1.3. Genital ulcerative diseases (in men and women)

Signs and symptoms	Multiple or solitary and painful ulceration of the penis or vagina	Multiple or solitary and painless ulceration of the penis or vagina
Common causes	Herpes simplex virus	Primary or secondary syphilis
Other causes	Chancroid, Behcet's disease, secondarily infected scabies, gonococchal/trichomonal or candidal infections, other bacterial infection, Stevens Johnson or Reiter's syndrome, erythema multiforme, dermatitis, psoriasis and lichen planus, impetigo, furuncles, folliculitis, and drug eruptions	Carcinoma, circinate balanitis, balanitis xerotica obliterans, lymphogranuloma venereum, granuloma inguinale, self inflicted trauma and dermatitis

An equally large body of anthropological and psychological/psychiatric literature, on the other hand, provides very different insights into the phenomena of genital discharge. Historically, genital fluids, especially semen, have been considered vital for an individual's healthy functioning. Any involuntary loss of semen has been viewed with deep anxiety and concern across a range of different cultures, western as well as eastern[15]. Empirical studies of semen loss related anxiety from South Asia, particularly India, have used the term 'dhat sydrome' to describe a condition in which a male patient presents with somatic complaints along with feelings of physical and mental exhaustion and anxiety, which he attributes to the passage of a whitish discharge (dhat or dhatu/ a vital fluid or semen) in urine[93-96]. The cited studies empirically documented the presence of depression and anxiety amongst a large proportion of men presenting with dhat syndrome. Researchers in India have also argued for the presence of a 'female dhat syndrome'[97,98], described by Nichter (1981)as a 'bodily idiom of distress' with a complex of cultural meanings and multiple etiologies including a 'dissolving of bones, loss of dhatu and overheat'[99].

In India, the diverse clinical settings in which such patients have presented themselves and been studied, points to an overlap between the psychosexual and biomedical nature of such complaints. Thus, empirical findings on patients complaining of genito-urinary symptoms have been reported not only from STD clinics but also from psychiatric out-patient clinics[96,100]. In one of these studies, the authors (Bhatia and Malik, 1991) examined 48 consecutive male patients of potency disorders at a psychiatric OPD in a hospital setting. 31 cases had 'dhat syndrome' and these scored maximally on neuroticism and depression scales.

Conversely, findings related to patients with depression and anxiety associated with sexual disorders have been reported not only from psychiatric settings but also from STD clinics[101-103]. Chaudhary et al in 1999 reported from their study of 400 consecutive STD patients that 19.75% were identified as possible psychiatric cases using the General Health Questionnaire (GHQ).

However many of the studies that were reviewed had examined the psychological or mental health aspects associated with the symptoms, separately from issues related to their infectious epidemiology. Thus, studies in psychiatric settings had excluded patients with a clear gynaecological problem or with clear evidence of an STI[100]. Few studies, national[101] and international[104] were found to have traversed the different domains of psychology and biology, an important one being Patel's recent community based study of nearly 3000 women in Goa[14]. 14.5 % women in this study complained of an abnormal vaginal discharge and stress (as measured through standardized psychiatric instruments) was the most common causal attribution for the complaint. High scores for common mental disorder and somatoform disorders and the use of an intrauterine device were independently associated with the complaint.

This thesis sought to examine commonly occurring symptoms of genital problems in men and women from a cross-disciplinary (biomedical and psychological) perspective and in relation to lay communities' perceptions of illness. In doing so, the sub-study

addressed research questions (see Methods Chapter) related to the associations between symptoms and infections and between symptoms and possible psychological distress.

Care seeking for reproductive tract morbidities

> "Effective management of STIs is one of the cornerstones of STI control, as it prevents the development of complications and sequelae, decreases the spread of those infections in the community and offers a unique opportunity for targeted education about HIV prevention. Appropriate treatment of STIs at the first contact between patients and health care providers is, therefore, an important public health measure".[105]
>
> - WHO, 2003

In rural and remote areas, early and correct treatment for reproductive tract morbidities is especially important as patients may not return for follow ups or for the results of lengthy laboratory testing. Therefore it is important to understand and study the first point of management where rural patients are likely to seek care.

Findings from many developing countries suggest that private providers are frequently the first port of call for those who suspect an STI[106-108]. STI patients are known to visit and revisit rural private practitioners in Bangladesh[109] and private allopaths and *hakims* (unani practitioners) in Pakistan[110]. Private sector services are more acceptable to people for their accessibility, confidentiality and responsiveness[10], even among those who believe government services to be technically superior[111].

Studies in India have also consistently reported a large proportion of care seeking for RTIs/STIs in the (undifferentiated) private sector[2,80,112], but have differed in findings related to the proportion of symptomatic men and women who seek care at all. Data gathered in the second round of the NFHS showed that two-thirds of women who reported a recent symptom suggestive of an RTI had not seen a provider for advice or treatment for this condition[2]. Less than one-third of the women who sought advice or treatment, went to a qualified government health professional. It has been suggested that

women suffer from reproductive morbidities for a long time because of their "culture of silence" and also due to poverty, cost of treatment, perceived seriousness and causality of symptoms, and availability and accessibility of health care[112,113]. Women's lack of autonomy also significantly constraints their health care seeking[114]. On the other hand, Bhatia and Cleland in their community based study of 421 young married women in a sub-district of Karnataka state in South India found little evidence of this 'culture of silence'[76]. The authors reported that married women experienced a heavy burden of reproductive morbidity (genito-urinary problems) and in more than half the episodes of illness, a practitioner was consulted.

Limited information from India also suggests that informal providers are an important source of care provision for reproductive tract morbidities in rural areas[40,113]. A study in Agra district in India found that only 28% of those reporting reproductive problems had sought treatment; 68% of the women who did, sought care from private practitioners in their village, mostly unqualified. Only around 11% had obtained treatment from a government primary health centre or sub-centre and 6% from the district hospital[113] .

1.5. Summary and research gaps

There is strong evidence that the informal private sector is a major component of India's health care system; that it provides care at "first contact" for low socio-economic groups and for a variety of illnesses including reproductive tract morbidities. This is especially true in rural areas where the formal health system has limited access.

As formally qualified allopathic providers are not likely to become available in sufficient numbers in rural areas in the foreseeable future, there is a need for the state to consider strengthening rural practitioners who do not possess formal professional qualifications. However, there is not enough systematically gathered evidence on the nature and quality of services that they provide, especially for reproductive tract morbidities. Strategies for provider strengthening need a stronger evidence base. This thesis is an attempt at adding

to the currently available evidence on rural private providers in India and their quality of care.

There is a large burden of reported genito-urinary symptoms among men and women in India. Biomedically these are suggestive of RTIs/STIs, that must be managed early if STIs are to be controlled effectively. However it is uncertain whether these symptoms are really caused by infections or other factors. Without knowing the picture of aetiologies behind the presenting complaints, it is difficult to make valid statements about the quality of care provided and about ways to improve the quality and treatment provided. Moreover, as the village practitioners are likely to be the first point of contact for men and women seeking care for reproductive tract morbidities, it is essential to have an evidence base for any future interventions that may seek to improve diagnosis and treatment of reproductive tract morbidities by rural private practitioners .

The inadequacies that were found in the information available on the rural and informal sector included: (1) lack of complete information on the dynamics of care seeking for reproductive tract morbidities in rural areas and the role of rural providers in this scenario, (2) lack of comprehensive information on the quality of care provided by rural private providers for reproductive tract problems; and (3) incomplete understanding of the range of etiologies associated with genito-urinary symptoms amongst symptomatic men and women attending rural provider clinics.

This thesis seeks to bridge some of the information gap with respect to reproductive tract morbidities and quality of care for these by rural private practitioners in Tehri Garhwal district in the state of Uttaranchal in north India. It uses a multi-disciplinary approach, bringing descriptive and analytical epidemiology and anthropology methods to the study of quality of care by the rural providers, most of whom do not have a formal medical qualification.

Chapter 2

RESEARCH QUESTIONS, OBJECTIVES AND METHODS

This chapter delineates the research questions and objectives that were derived from the gaps identified in the literature review and describes the methods that were used to study these. The choice of the salient methods is justified in the chapter, research tools used are described and details of study implementation and data analysis are provided.

2.1. Aim

The aim of this PhD research is to contribute to the body of knowledge on quality of care by rural private providers in India and on reproductive tract morbidities, related etiologies and care seeking in rural communities. The findings are intended to be useful for any future strategies that seek to engage with and improve quality of care by the rural private health sector in India, and to review the existing syndromic management guidelines for managing RTIs/STIs in India. The specific gaps that were identified in the literature review are addressed through four research questions and specific objectives listed below:

2.2. Research Questions and Objectives

2.2.1. What are the patterns of care seeking for perceived reproductive tract morbidities in the study communities and how are decisions around care seeking made?

2.2.1.i. To describe how men and women in rural communities perceive and describe problems associated with the genital/reproductive organs.

2.2.1.ii. To explain patterns of care seeking for reproductive tract morbidities and decision making around these.

2.2.2. What is the lay construct of provider quality, particularly in relation to care seeking

for problems of the genital/reproductive organs?

2.2.2.i. To describe a lay construct of provider quality based on people's views.

2.2.3. What is the quality of rural private providers' care for reproductive tract morbidities, particularly for RTIs/STIs?

2.2.3.i. To evaluate providers' technical quality of care for RTIs/STIs against syndromic management criteria.

2.2.3.ii. To evaluate providers' interpersonal quality against selected lay indicators.

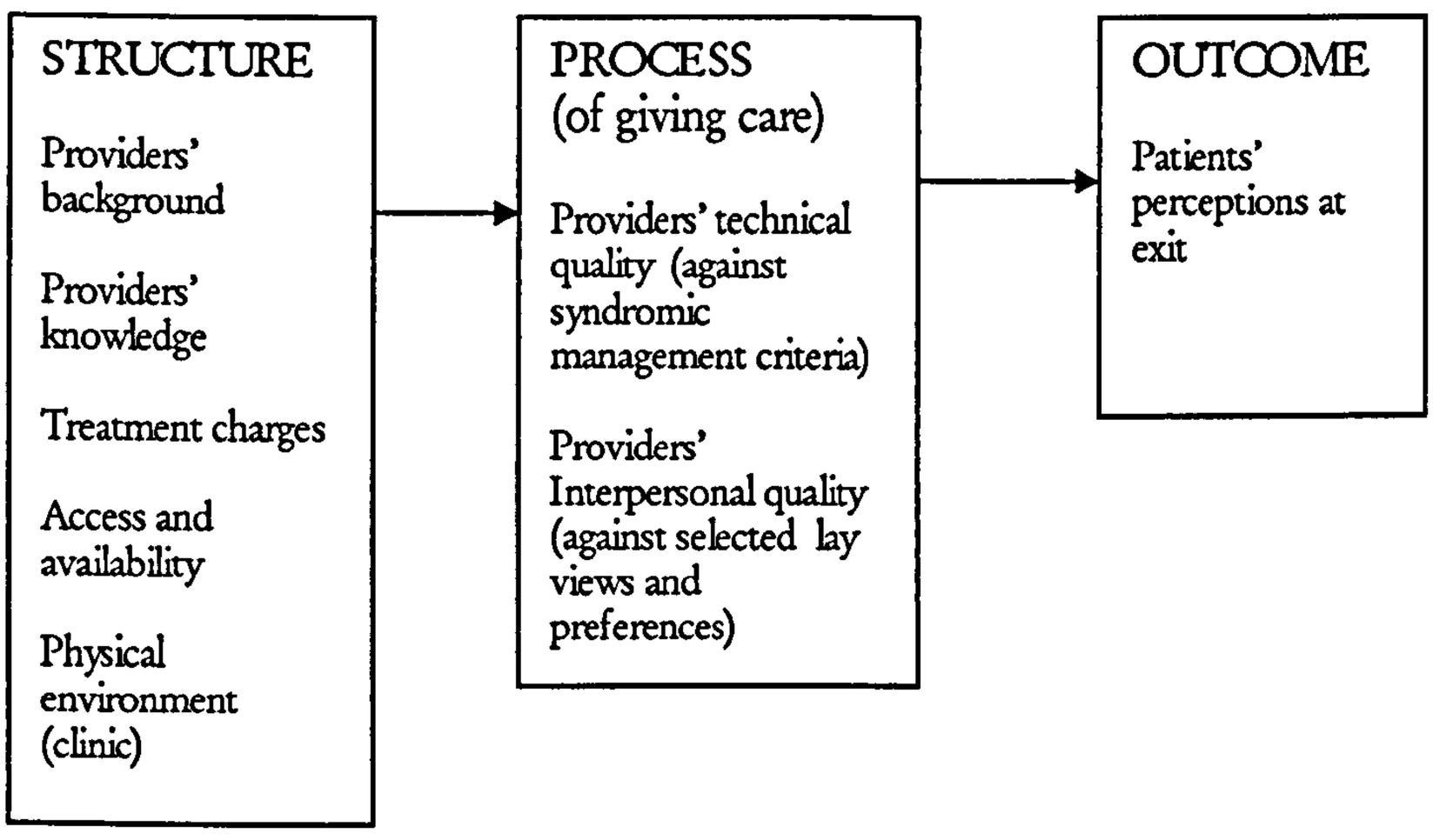
2.2.3.iii. To identify determinants of provider's technical and interpersonal quality.

2.2.3.iv. To describe other service delivery issues: access, cost and facilities.

2.2.3.v. To describe patients' perceptions of the encounter and their satisfaction with it.

The diagram below (Fig. 2.1) illustrates the framework used to evaluate quality as expressed in objectives 2.2.3.i-2.2.3.v. The framework is an adaptation of Donabedian's[61] and Bruce's[62] models of quality of care.

Figure 2.1. Quality framework to assess providers' quality



2.2.4. Can infections of the reproductive tract adequately explain the presence of reproductive tract morbidities (as manifested in genito-urinary symptoms) in men and women seeking care at rural provider clinics?

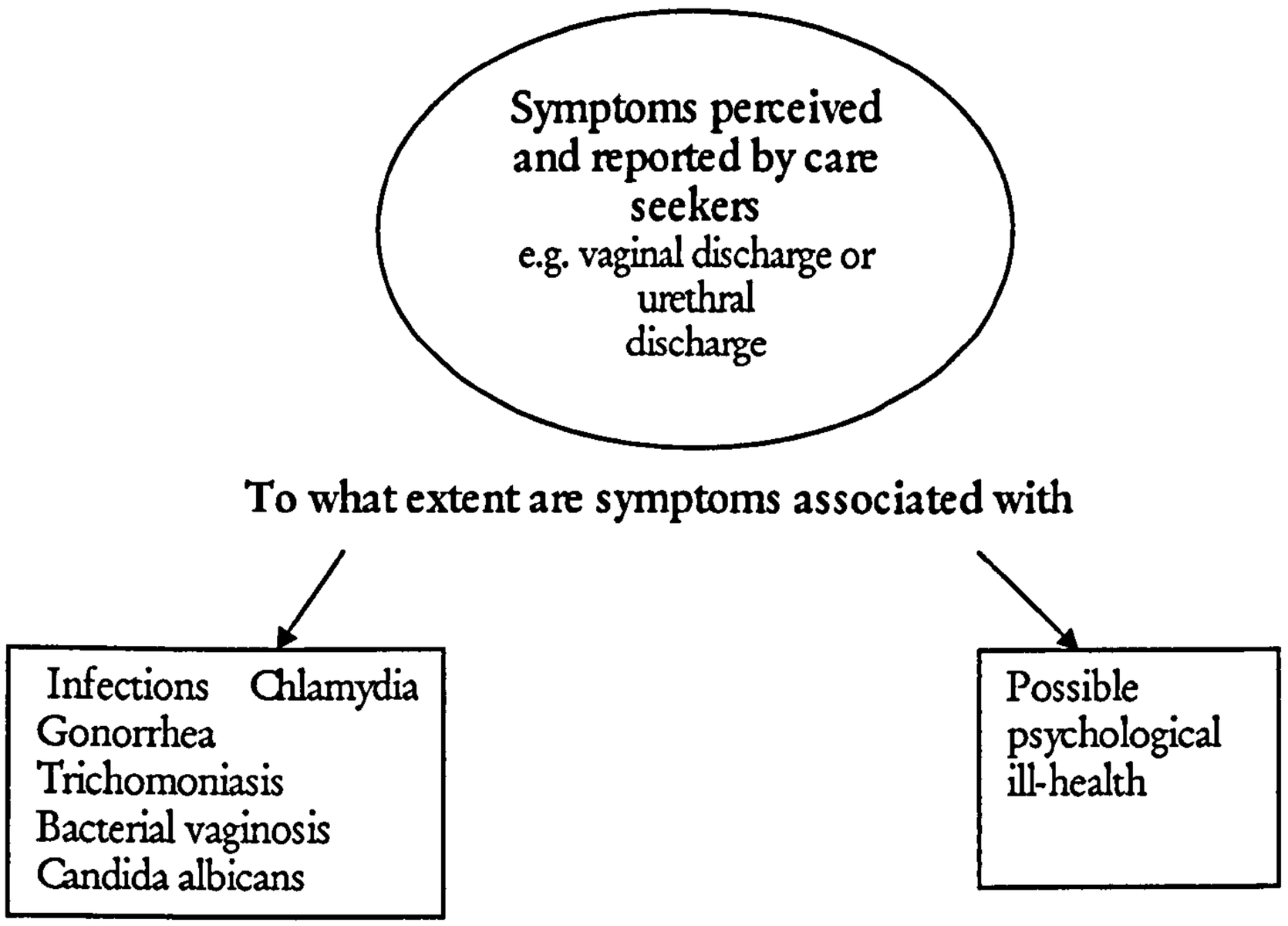
2.2.4.i. To detect the prevalence of laboratory diagnosed infections in symptomatic care –seekers (men and women) at rural provider clinics.

2.2.4.ii. To investigate the association between symptoms and infections in the care seekers.

2.2.4.iii. To investigate the association between symptoms and possible psychological ill health in the care seekers.

The diagram (Fig. 2.2.) below illustrates objectives 2.2.4.ii. and 2.2.4.iii.

Figure 2.2. Framework to study associations between symptoms and infections and symptoms and psychological ill-health



2.3. Research Design

2.3.1. An overview of study design and research procedures

The study followed an exploratory and observational study design.

A series of cross-sectional qualitative and quantitative sub-studies were carried out in 6 out of 9 blocks in the district (see section 2.7: Sampling – selection of the study areas). These sub-studies were conducted over 18 months in two phases briefly described below (for details of study implementation, see section 2.8.)

(i) Phase I: All private providers (not qualified in allopathic medicine) in the study areas were mapped, and mainly qualitative data were collected on people's views regarding genital illnesses and problems, care seeking for these conditions and their perceptions and views on quality of care Activities in this phase included a provider mapping survey, free listing of perceived symptoms by rural men and women, focus group discussions with community members and household interviews with individual men and women. A description of these tools follows in section 2.5.

(ii) Phase II: This phase consisted mainly of quantitative research sub-studies, focusing on evaluation of providers' quality of care and on symptoms and possible aetiologies in the symptomatic care seekers attending the provider clinics. Activities in this phase included clinic observations of patient provider interactions, provider interviews, facility assessments, patient exit interviews, collection and laboratory testing of patients' biological specimens, and administration of the General Health Questionnaire to screen for psychological ill health. A description of these tools appears in section 2.5.

An overview of the tools used in relation to the different study objectives is provided in Table 2.1.

Table 2.1. An overview of the research methods used to study the specific research questions and objectives

Research Question	Objectives	Method of data collection	Data source
PHASE I			
2.2.1. What are the patterns of care seeking for perceived reproductive tract morbidities in the study communities and how are decisions around care seeking made?	2.2.1.i. To describe how men and women in rural communities perceive and describe problems associated with the genital/reproductive organs.	Free listing of symptoms Focus group discussions Household interviews	Interviews with 15 men and 15 women 2 each with groups of married men, married women, and adolescent boys and girls (total of 8 FGDs). 75 men and 75 women, aged 15-49 years
	2.2.1.ii. To explain patterns of care seeking for reproductive tract morbidities and decision making around these	Same as above	Same as above
2.2.2.What is the lay construct of provider quality, particularly in relation to care seeking for problems of the genital/reproductive organs?	2.2.2.i To develop a lay construct of provider quality based on people's views	Focus group discussions Household interviews	2 each with groups of married men, married women, and adolescent boys and girls (total of 8 FGDs) Interviews with 75 men and 75 women, 15-49 years
PHASE II			
2.2.3.What is the quality of rural private providers' care for Reproductive Tract morbidities, particularly for RTIs/STIs?	2.2.3.i. To evaluate providers' technical quality of care for RTIs/STIs against syndromic management criteria	Observations of patient –provider interactions at provider clinics	60 providers and 168 men and 199 women seeking care at their clinics (roughly 3 male and 3 female patients observed per provider)
	2.2.3.ii. To evaluate providers' interpersonal quality against selected lay indicators	Same as above	Same as above

Research Question	Objectives	Method of data collection	Data source
	2.2.3.iii. To identify determinants of provider's technical and interpersonal quality	Observations; Provider interviews; Exit interviews for patient related information	168 men, 199 women patients at 60 provider clinics Interviews with 60 sampled providers in the 6 study blocks Interviews with 367 patients (168 men; 199 women)
	2.2.3.iv. To describe other structural aspects of quality: providers' background and knowledge, charges, access and clinic environment	Observations; Providers' interview and Facility assessment; Exit interview	367 patients at 60 provider clinics 60 providers and facilities 367 patients
	2.2.3.v. To explore and describe patients' perceptions of the encounter and their satisfaction with it.	Exit interview	367 patients at 60 provider clinics (168 men and 199 women)
2.2.4. Can infections of the reproductive tract adequately explain the presence of symptoms in men and women seeking care at rural provider clinics?	2.2.4.i. To detect the prevalence of laboratory diagnosed infections in care – seekers (men and women) at rural provider clinics.	Laboratory tests- PCR for NG, CT; Latex agglutination for TV; microscopy for BV and CA.	Biological specimens of 363 patients-urine from men and 3 self administered vaginal swabs from women (4 patients out of 367 refused to give samples)
	2.2.4.ii. To investigate the association between symptoms and infections in the care seekers.	Symptoms recorded in the observation tool; lab tests for infections	Symptoms reported by 363 patients Lab tests on 363 patient specimens as in 4.1.

Research Question	Objectives	Method of data collection	Data source
	2.2.4.iii. To investigate the association between symptoms and possible psychological ill health in the care seekers.	Symptoms recorded in the observation tool; General Health Questionnaire administered for psychological screening	Symptoms reported by 363 patients Responses of 363 patients on the GHQ

2.3.2. Justification of methods used to evaluate quality

The framework

This study concentrated on assessing quality from the perspective of providers (as providers' of quality) and patients (as receivers of quality), while recognizing that this was still only a part of the fuller picture of quality that also includes a third dimension, that of the health managers or health authorities whose role it is to ensure equity and efficiency of health care. Limited study resources necessitated this focus as well as the fact that was very limited evidence available on providers' quality in this area. The theoretical framework used to study quality of providers was a modified version of the framework described by Donabedian and Bruce. Donabedian's framework was used for its encompassing and yet generic nature that maps the structure, process and outcomes of quality and combines the perspectives of users and providers. It also allowed the flexibility of measuring individual providers and their users rather than larger health systems or health services. This framework has been described earlier in the Literature Review chapter.

Structure refers to the human, material and organizational resources of the setting in which care occurs[61]. 'Good structure', according to Donabedian, 'increases the likelihood of good process and good process increases the likelihood of a good outcome'. The

structural elements of quality included in this study were providers' qualifications, knowledge (as measured on a knowledge questionnaire), treatment charges, accessibility/ availability, and physical environment of the clinic (provision for privacy and of required equipment). Some of these elements such as accessibility, availability and physical environment of the clinic, derive from Bruce's elements of appropriate constellation of services. These are crucial from the clients' or users' perspective and can influence their perception of quality of care. Providers' qualifications, knowledge and treatment charges were selected because of their potential influence on providers' quality of care. Studies on quality of care have assessed an assortment of these elements and also evaluated these as factors influencing providers' technical quality of care[7] and their prescribing behaviour[115,116] as well as patients' quality judgements[66,117].

Process denotes what is actually done in giving and receiving care[61]. This includes providers' technical as well interpersonal quality of care[61,62]. Bruce's model, which further to Donabedian's, highlighted the importance of interpersonal relations alongside providers' technical quality was the inspiration for the inclusion of these elements under the process of care. While providers' technical competence can contribute to positive health outcomes, patients preferences have long valued providers' interpersonal skills[118,119]. The medical community today recognizes interpersonal skills as a significant component of provider competence[120,121].

Since Bruce's model was developed more in relation to family planning services, not all the elements in that model were applicable to this study and so the selection of technical and interpersonal indicators for use in this study was based on the study's own unique needs governed by the setting in which it was located. Thus, in this study, elements of technical quality were derived from the existing syndromic management protocols for management of RTIs/STIs. Indicators for interpersonal quality were developed from qualitative information on community members' views and preferences obtained through 1) focus group discussions, and, 2) empirical data from household interviews of men and women. A more elaborate method used by Jung et al[122] that compared patients' preferences with their evaluations of general practice care provided a basis for the

method used for developing the interpersonal quality indicators in this study. It was also the case that a prior review of existing tools (rating scales, checklists and observation guides) used for assessing providers' interpersonal skills did not readily suggest a gold standard tool that could be applied in the context of the present study.

According to Donabedian, outcome refers to the effect of care on the health status of patients, including the degree of patients' satisfaction with care. In this thesis, the study of outcomes was limited to patients' assessments of care as it was not possible to empirically evaluate patients' health improvements within the scope of this study. Patients' assessments were elicited through a simple open ended question in the exit interview rather than through any available instruments of assessing patient satisfaction. An extensive review of 195 studies of instruments to assess patient satisfaction[123] had revealed that there was little evidence of reliability and validity in the reviewed studies. As ours was not an empirical study of patient satisfaction, a qualitative examination of patients' views at the end of their visit was considered to be adequate.

The methods

A few assessments of quality of care have used and compared single methods such as observations of patients and providers and client exit interviews[124,125]. However, the greater body of literature on methodology for assessments of quality, including assessments of STI case management, recommends that where possible and feasible, a range of methods should be used to assess quality of care[61,62,126-129] and that these should include both qualitative and quantitative methods. This combination of methods enables an in-depth inquiry into all aspects of quality at different levels: the structure or the setting level, the process level and the outcome level and covers the material aspects of quality such as equipment and supplies, as well as the provider and patient aspects. Thus, the best mix of methods that have been used, studied and found to be the most appropriate mix (in spite of a few limitations inherent in each one) include: a) facility assessments to assess the level of readiness and preparation for provision of quality services (b) provider survey and interviews to assess the level of provider knowledge and

their reported practice (c) observations of provider patient interactions to observe and record what actually happens during the process of care provision, and, (c) exit interviews of patients to assess satisfaction with the quality of services and recall of main treatment information provided by the provider. For assessment of the process of care giving, direct observations have demonstrated the best overall balance of sensitivity and specificity[1], as compared to exit interviews and record reviews[130].

The present study used a combination of tools to address the study objectives. These tools are described in detail under section 2.5 -"Description of tools"

2.4. Tool development

The author of this thesis undertook the primary responsibility for developing the tools in consultation with other study staff and advisors. Tools were developed in a sequential manner as the results of one research process were often required to feed into the tools for another. First, the draft tools for the Phase I research processes were constructed. These were modified and finalised as the research progressed. Tools for Phase II were drafted alongside Phase I research activities and modified and finalised with inputs from the preliminary analysis of Phase I data.

Two review workshops held at different time periods during the study, reviewed the research processes, pilot results and other preliminary results and guided modifications in the tools. Participants included the entire research team and study advisors (Heiner Grosskurth, Ruairi Brugha, Vikram Patel, Nimesh Desai, Ravi Verma) and collaborators (D. Nandan, Nimrat Bawa, Neeraj Goel). A third workshop focussed on the observation tool for observing patient provider interactions. This workshop was led by Dr. Ravi Verma, a psychologist with expertise in population and sexual health research, Dr. Deoki Nandan, a community medicine specialist, and the Study Coordinator. During this

[1] The 'gold standard' was defined as the application of the observation checklists by observers with extensive quality assessment experience and experimental observations were performed by evaluators who were applying the observation instruments for the first time after a 3-day training.

workshop, the technical criteria and the interpersonal criteria to be observed during patient provider observations were debated, defined, piloted and finalised. Field staff were also trained in using the observation tool (see section 2.8.2 on staff training).

2.5. Description of the tools used in the research sub-studies and their sequential development

Phase I

1. Freelisting: An interview guide was used that explored symptoms and local terms for complaints associated with the genital/reproductive organs. This list of symptoms and their local names was used to question providers about their patients in the provider mapping tool. They were also used to explore people's care seeking for such symptoms in the FGDs; and for recruiting patients at provider clinics in Phase II. (Appendix 2)

2. FGDs: An FGD guide or checklist was used that explored the community's care seeking practices with respect to general health problems as well as problems of the genital/reproductive organs; providers who they approached and why; and the community's views on what constituted good quality in a provider, especially one they would like to approach for a reproductive tract or genital problem. The information obtained from the 8 FGDs was used in the household interview schedule to modify questions related to care seeking and to obtain more details of people's views on quality. Appendix 3

3. Provider mapping: A close ended, pre-coded questionnaire with a few open ended questions related to the providers' training, experience, patient profile and practice characteristics was used. Information obtained from the provider mapping was used to draw the sample of providers for Phase II research processes and also to construct some of the items in the Phase II providers' facility assessment tool. Appendix 4

4. Household interviews: A close ended, pre-coded questionnaire with a few open ended questions was used. Questions related to information on men and women's personal experiences with care seeking, both for general health problems and genital/reproductive organs problems, and care that they obtained. The tool also enquired into people's reported reasons for approaching certain providers and into their perceived notions of 'good quality'. Information obtained on quality was used to develop criteria for evaluating provider's interpersonal skills (included in the 'patient provider observation tool') in Phase II. Appendix 5

Phase II

5. Provider interviews: A structured, pre-coded questionnaire was used with provision for recording verbatim responses as well. The tool reviewed providers' background, and examined provider knowledge about the causes and treatment of key STI symptoms. Appendix 6

6. Facility assessments: A checklist with some close ended questions was used to document the physical environment, equipment and essential supplies in the provider clinic. Appendix 7

7. Observations of patient provider interaction: An observation tool was used that combined checklisted items to document providers' technical quality and a simple 3-point scale to evaluate interpersonal skills during each patient-provider interaction. The tool also documented patients' symptoms, treatment received and charges incurred by patients. Appendix 8

7.a. Selection of technical criteria included in the observation tool:

Six syndromic management criteria were selected for assessing providers' technical performance, namely: history taking about symptoms, questioning about risky practices, doing a clinical examination, advising on prevention, condom counseling and attempting

partner treatment. These criteria are incorporated into WHO's ten prevention indicators (PIs)[131] that provide a measure for evaluating the effectiveness of country level AIDS programmes[132]. PI6 dealing with STD case management assesses the provider's adherence to history taking for onset and duration of symptoms and for sexual practices, and also for clinical examination and treatment. PI7 refers to whether basic advice is provided on condom use and on partner notification for treatment. In the same study, Mehret et al have also reported on and discussed the importance of prevention advice (apart from condom counseling and partner notification). Other studies that have assessed syndromic management have utilized similar criteria in the past[43,84].

The drugs dispensed by providers were also noted for each patient.

Z.b. Selection of interpersonal criteria to include in the observation tool:

Providers were observed on 8 interpersonal skills identified and derived from the qualitative data (FGDs and interviews with men and women during the household survey). These skills included providers' friendliness, respectful behaviour, attentiveness, attitude of openness, provision of privacy, non-judgmental attitude, use of appropriate language, provision of reassurance.

First, the FGDs elicited broad explanations of what communities perceived as good provider quality. These were broadly categorized into two domains: technical and behavioural. The behavioural domain ('provider's good behaviour') was explored further in the household survey, in order to derive important elements of providers' interpersonal skills that could be observed during patient-provider interactions. 150 adult men and women, interviewed during the household survey, were asked to list three characteristics of what in their view constituted good behaviour in a doctor (particularly for genital problems).

The question was open-ended and responses were recorded verbatim. All responses were read and categorized into 16 key codes. Cumulative frequencies were calculated for

each code by adding the number of times a code appeared as the first response, second response and third response. Many responses also included characteristics that were not directly related to good behaviour. To sort the items, only those that contained behavioural dimensions without a technical or monetary component were categorised as characteristics of good behaviour (Items 1-8 in Table 2.2). Items 9-16 included responses which reflected other provider characteristics, mainly perceived technical skills and user charges. These were not included under the generic behavioural skills.

Table2.2. Characteristics of providers' good behaviour: respondent's views

Characteristics of good behaviour	Frequency
1. Talks respectfully	56
2. Talks in the local language	56
3. Friendly, understanding and kind	46
4. Provides confidentiality and privacy	42
5. Honest and of a good character	32
6. Listens attentively	20
7. Has an attitude of openness and frankness, is not shy	12
8. Provides reassurance	6

Other responses	Frequency
9. Does a thorough history taking and examination	41
10. Gives good and effective medicine	34
11. Explains about the treatment and disease	16
12. Medicine is cheap, also gives credit	16
13. Has good technical knowledge	13
14. Available when needed	6
15. Gives good advice	5
16. Correct diagnosis	3

The behavioural elements were used to observe and evaluate providers' interpersonal communication skills during the patient-provider interactions of Phase II of the study. However, out of all these items, item 5 ('honest and of a good character') did not have clearly observable indicators and was difficult to observe. Therefore it was dropped from the observation tool, and in its place 'non-judgemental attitude' a provider skill recommended in NACO's guidelines, was added.

Table2.3 provides a description of the behaviours to be observed under each of the elements of interpersonal communication skills

Table 2.3. Description of behaviours to be observed under each of the elements of interpersonal communication skills

ELEMENTS OF INTERPERSONAL COMMUNICATION SKILLS	DESCRIPTION OF BEHAVIOURS TO BE OBSERVED	MEASUREMENT OF EACH ELEMENT
1. FRIENDLINESS	Extent to which provider: -shares/exchanges personal information or a thing to eat/drink with the patient -has a pleasant and friendly expression and way of talking -says 'namaste' or any other form of verbal/non-verbal greeting when the patient enters or leaves	0 - if none of these performed by provider 1- if one or two performed 2 - if all performed
2. RESPECTFUL BEHAVIOUR	Extent to which provider: -speaks respectfully -expresses respect through his body language	0 - if none of these performed by provider 1- if one performed 2 - if showed respect in both verbal and non-verbal expressions
3. ATTENTIVENESS	Extent to which provider: -listens attentively to the patient (by acknowledging what patient is saying, asking questions, appears attentive through body language) -maintains eye contact/looks at the patient while listening	0 - if none of these performed by provider 1- if provider was attentive in just one way 2 - if provider demonstrated attentiveness in both ways
4. PRIVACY	Extent to which privacy of the consultation is maintained: -away from hearing of other patients (thorough) lowering voice or in any other way (somewhat)	0 - if privacy was not provided at all 1 - if privacy provided was verbal but still in the physical presence of other patients 2 - if privacy was

ELEMENTS OF INTERPERSONAL COMMUNICATION SKILLS	DESCRIPTION OF BEHAVIOURS TO BE OBSERVED	MEASUREMENT OF EACH ELEMENT
		complete (away from seeing or hearing of other patients)
5. ATTITUDE OF OPENNESS	Extent to which provider : -encourages patient to speak openly, frankly and honestly about their problems -speaks openly and without inhibitions himself, by not hesitating to use words related to private bodily parts or bodily processes	0 - if none of these demonstrated by provider 1 - if provider demonstrated openness in just one way 2 - if provider demonstrated openness in both ways
6. NON-JUDGEMENTAL ATTITUDE	Extent to which the provider: -does not impose his own biases / personal reactions / views and opinions on the patient, especially with respect to the patient's sexual practices	0 - not at all 1 - somewhat 2 - very much
7. LANGUAGE USE	Extent to which provider uses language appropriate for the patient's comprehension, while discussing the symptoms or the disease or treatment	0 - not at all 1 - somewhat 2 - very much
8. REASSURANCE	Extent to which the provider reassures patient from time to time during the interaction and at the end	0 - not at all 1 - somewhat 2 - very much

(* Items 6-8 are more subjective in their measurement than the others)

8. Patient exit interviews: A structured, pre-coded questionnaire with some open ended questions was used, related to patients' sequence of care seeking for their present complaints, their satisfaction with the current provider and his services, and issues of accessibility to the current clinic. (Appendix 9)

9. Stage I psychological screening of patients: The General Health Questionnaire (GHQ), which is a WHO approved and validated 12 item questionnaire with Yes or No responses, was used. (Appendix 10)

The GHQ was designed as a self administered screening test aimed at detecting non-psychotic psychiatric disorders such as depression and anxiety, in community settings and non-psychiatric clinical settings such as primary care or among general medical out patients[133]. It was not designed as a diagnostic instrument; rather it provides a probability estimate of an individual being a psychiatric case. The GHQ has found extensive use in research to estimate the prevalence of mental illness in populations and as a means of picking up cases of hidden psychiatric illness in medical clinics that might explain the patient's presence in the clinic. It has been translated into 38 languages and validated extensively all over the world, including in a 14 country WHO study of mental illness in general health care[134]. In India different versions of the GHQ have been used in different language settings including Hindi[135], Kannada[136], Gujarati and Marathi[137]. It has also been validated among ethnic Indian women living in the UK[138]. Many of the validation studies reported have been with low literacy individuals to whom the questions were read out and explained.

Although the earliest version of the GHQ consisted of 60 items, the shorter version comprising 12 items was found to be equally robust when used and validated in the WHO multi-centric study that also included a centre in South India[139].

10. Patient specimens for laboratory investigations: Self-administered vaginal swabs from women and first void urine (FVU[2]) from men were collected and processed for further transportation and laboratory testing (see more details in section 2.8.6 – Laboratory Procedures)

[2] FVU: first portion of urine voided after a gap of 2-3 hours.

Justification of laboratory methods used in the detection of reproductive tract infections

The syndromic management guidelines adopted for use in India by the National AIDS Control Organisation (NACO), recommend management of five common non-ulcerative RTIs/STIs: Neisseria gonorrhea, chlamydia trachomatis, trichomonas vaginalis, bacterial vaginosis and candida albicans (please see Appendices 14-16 for flowcharts for vaginal discharge, urethral discharge and lower abdominal pain).

This study investigated patients' biological specimens for the above infections, through gold standard and one rapid laboratory test (for TV) as presented in Table 2.4.

Table 2.4. Patient specimens, laboratory tests used and justifications

Patient specimen	Tested for	Test used	Justification for using test
WOMEN-3 self administered vaginal swabs3	Neisseria gonorrhea & Chlamydia trachomatis	Polymerase chain reaction (PCR test) – Roche Amplicor CT NG Test, Germany (using pooled samples[89,140])	Gold standard tests for NG and CT[145-147] For swabs in women[145,147]: Sensitivity:87%-95%% Specificity:99%-100% (urine has shown lower sensitivity in women[147]
	Trichomonas vaginalis	Rapid latex agglutination test [141,142]– Kalon Biologicals, UK	Validated as a sensitive test against culture and wet mount[142]: Sensitivity: 98.8 Specificity: 92.1 PPV : 83.0
	Bacterial vaginosis	Microscopic examination, using Nugent's criteria, on gram stained smears prepared from swabs[143,144]	Nugents criteria has high inter scorer reliability coefficient (0.82) as compared to Speigel's criteria (0.61)
	Candida albicans	Microscopy on gram stained smears	Microscopy is standardly used as it is more practical, although culture is more sensitive[148]

[3] Have been validated in other low resource settings (Garrow et al, 2002), including their dry transport to laboratories (Gaydos et al, 2002)

Patient specimen	Tested for	Test used	Justification for using test
MEN-first void urine (FVU) – first portion of urine after a 2-3 hour gap	Neisseria gonorrhea & Chlamydia trachomatis	Polymerase chain reaction (PCR test) – Roche Amplicor CT NG Test, Germany (using pooled samples[89,140])	Gold standard test for NG and CT For urine in men[140]: Sensitivity:87%-97% Specificity:98%-100%

The Rapid Latex test for TV, although not the gold standard has been found to have a high sensitivity and specificity and PPV (see Table 2.4) comparable to an 'expanded gold standard' based on culture and wet mount results[141,142]. Moreover it is easy to use in low resource settings. Therefore this test was used for detection of TV in women using swabs. Male urine samples, however, could not be tested for TV as their initial use in the Kalon test gave a high proportion of false positive results. Urethral swabs could not be collected from men and a PCR test for TV, which could have used the urine samples, was not commercially available.

Gram stained smears prepared from vaginal swabs have also been used reliably for the assessment of vaginal flora for bacterial vaginosis[144]. The Nugent scoring method[143] for bacterial vaginosis is a reliable and standardized criteria that allows the identification of three types of vaginal flora: normal, intermediate and bacterial vaginosis. Thus, microscopy with Nugent's criteria was used for the detection of bacterial vaginosis.

2.6. Piloting

Each study tool was translated into Hindi and piloted before being used. The author, being fluent in Hindi, translated the tools or closely supervised and reviewed the translations. All piloting was conducted in non-study areas in the same district.

The FGD topic guide was first discussed with a group of community members for its comprehensiveness and feasibility of use. It was then piloted with a small group of men and a small group of women who were relatives of clinic attendees at the Christian hospital at Chamba. The household questionnaire was first piloted by the Study Coordinator and the research team in 15 households (10% sample), modified and then

piloted again in 5 households. The mapping survey tool was first piloted with 5 providers, modified and piloted again with 6 providers. All modifications in the tools were incorporated directly in Hindi (the local language).

Phase II research procedures were first piloted independently, modified, and then piloted all together, along with the laboratory procedures, at 5 different provider sites and with 11 male and 24 female patients. To finalise the tools, pilot results were discussed in a workshop (see section on tool development) with the entire research team and with study advisors and collaborators, including the microbiologists and the social scientists.

2.7. Sampling

Selection of the study areas:

Tehri Garhwal has a total of 9 developmental blocks. 6 blocks[4] were selected for the study using stratified random sampling. Out of nine blocks in the district, eight[5] were stratified by socio-economic development using three indices of development: a) percentage of female literacy, b) percentage of agricultural workers in the total workforce, and, c) percentage of scheduled/backward castes and scheduled tribes. Similar indices have also been used in NFHS surveys [149]. The blocks were thus divided into 3 strata– low (2 blocks), medium(3 blocks) and high (3 blocks). Both blocks from the low strata were selected and from each of the other strata, 2 blocks were randomly selected. This resulted in a total of 6 blocks, representing areas with different levels of development in each district (see Fig. 2.3. Stage 1 & 2).

[4] Block is the smallest administrative unit of a district

[5] One block was not included as it contained a large proportion of urban areas.

Free listing

15 adult men and 15 women were interviewed to obtain a free listing of perceived symptoms of genital problems, especially those suggestive of RTIs/STIs. Respondents were purposively selected in different villages in different block clusters from convenient locations in the village: near provider clinics, near shops, near a village utility such as a well, and outside their homesteads. Interviews however, were held in privacy either in enclosed spaces or away from the hearing of others.

Focus Group Discussions (FGDs)

FGDs were held with groups of unmarried adolescent boys and girls, and married men and women. Two FGDs were held with each group, 8 in all. The groups formed were homogenous with respect to sex, social class, age groups, literacy levels and marital status and typically consisted of 8-12 participants. FGD participants were purposively selected from villages in different block clusters, with the help of a key informant such as a local NGO worker or a teacher or a village midwife. Participants in each group usually knew each other as they either belonged to the same village or were part of a naturally occurring group such as the same class in a village school or a group of women belonging to a self help group.

House Hold Survey Of Men And Women

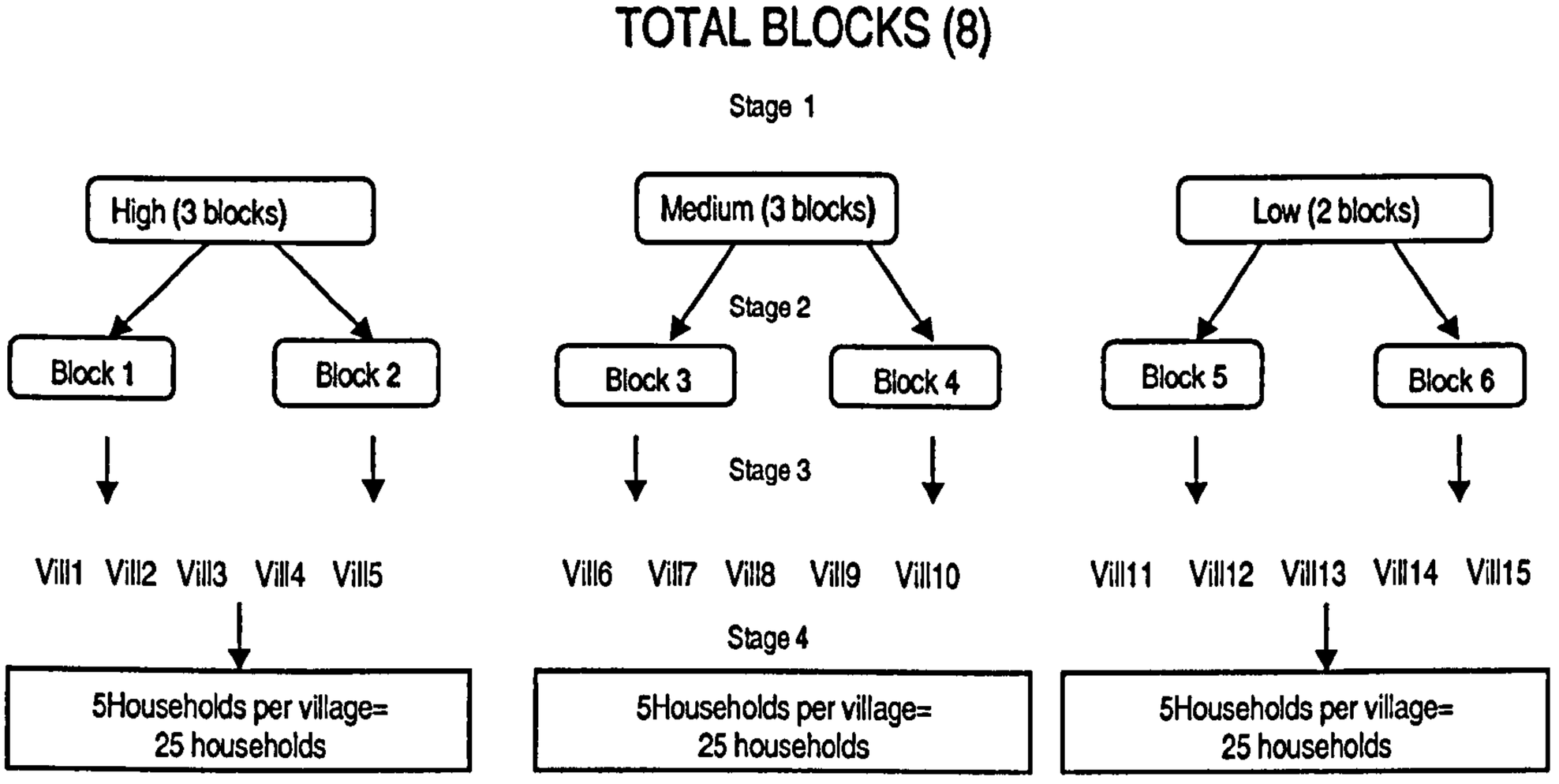
75 men and 75 women, aged 15-49 years, were recruited for the household survey through a process of stratified random selection described below:

From each of the three block clusters in the district, 5 villages (with more than 10 households/village) were randomly selected by drawing lots. Thus a total of 15 villages were selected (Stage 3, Fig. 2.3.).

Five households were randomly selected from each of the 15 selected villages, resulting in a total of 75 households. To select the households, the research teams conducted a brief geographical and social mapping of the selected village to understand its social structure and geographical layout. 5 households were then randomly selected so that they were representative of the entire village and of the different types of social classes and caste groups resident in it. Thus, from each block cluster, 25 households were selected resulting in a total of 75 households (see Stage 4, Fig. 2.3).

Adult consenting men and women, in the age range 15-49 years, were interviewed from these 75 households. They were not necessarily marriage partners. Where either a male or a female member was not available in a household, only the available member was interviewed and a respondent of the other sex was recruited from an adjacent household.

Fig.2.3. Stratified random selection of households within the study blocks.



Providers and patients

The research processes of Phase II focused on a sample of selected providers and on the patients who sought care from them for a problem suggestive of an RTI/STI. The following sampling procedures were used to recruit providers and patients:

A total of 60 providers were sampled for the study with an additional 20% replacements for possible dropouts. This was sufficient to measure provider specific indicators, such as 'quality of care' with a precision of 5 % at the 95% confidence interval, if the estimated proportion of providers with the outcome was 10 %, and with an estimated total of 100 providers in the six study blocks[6]. These providers were selected from those who had reported receiving RTI/STI patients during the mapping and had consented to participate in the study. Stratified random sampling, based on providers' reported RTI/STI patient load in the preceding month, was used to select the providers. For feasibility reasons, only those providers were included who reported receiving more than 10 RTI/STI patients in the preceding month.

To measure patient specific indicators, such as 'received correct treatment', with a sufficient degree of accuracy (precision of 3%[7] at the 95% confidence interval, for an estimated outcome of 10%), a sample size of 368 patients[8] was calculated. The aim was to recruit the first 3 consenting male and female patients in Tehri (total of at least 6 patients per provider), who sought care for symptoms that were included in the list of symptoms developed from the free listing exercise.

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[6] estimates based on a previous provider survey conducted by GCDWS in 1998-99.

[7] We expected a relatively small clustering effect as the population was expected to be quite homogenous in their socio-demographic characteristics, and the precision of 3% does not take clustering into account. However, during the data analysis, clustering effect of the non-independence of patients at individual provider clinics was adjusted for.

[8] From census and NFHS data we estimated a total of around 9,000 care seekers over a 6 month study period.

2.8. Study Implementation

2.8.1. Staff recruitment

The author collaborated with the Garhwal Community Development and Welfare Society (GCDWS), a hospital based non-governmental organization, affiliated with the Christian Hospital in Chamba, Tehri Garhwal. GCDWS is a rural NGO working at the grassroots level; it is led by a team of medically trained and committed health personnel, with an interest in public health activities in all parts of Tehri Garhwal district. Dr. Rajesh Singh, the founder head of GCDWS and a physician cum surgeon by training, was the senior collaborator with the author on this study. He also administered the implementation of the study. The author of this thesis was contractually engaged by GCDWS as the Study Coordinator.

The Study Coordinator and Dr. Singh jointly selected the field staff for the study. All field staff were contractually appointed by GCDWS and included one Field Research Manager, 8 Field Research Assistants (4 male, 4 female), one Data Manager, one Data Entry Operator, one part time Accountant and one Office Attendant. The Field Research Manager was a trained nurse with extensive experience of community health projects; Field Research Assistants had been trained in paramedical work or social work and had some experience of community outreach work.

2.8.2. Staff orientation and training in data collection

At the project start-up, the Study Co-coordinator, assisted by the Field Research Manager, oriented the staff to the project goals, objectives and procedures and trained them in general data collection techniques as well as in the use of research tools in the study. Dr. Singh, assisted by the Study Coordinator oriented the staff to the technical/clinical content of the study. As the study progressed, field researchers received continuous on- the- job guidance and supervision from the senior study staff .

Prior to the start of Phase II of the research, field staff were trained in laboratory procedures, in administration of the GHQ, and in use of the patient-provider observation tool. These trainings are described in the following sections. The Study Coordinator conducted a refresher training for the field staff in use of the other Phase II tools: the provider interview, facility assessment and patients' exit interview.

2.8.3. Special training- laboratory procedures

Dr. Nimrat Bawa and Dr. Neeraj Goel, senior microbiologists from Auroprobe laboratories, a quality certified laboratory in New Delhi trained the project staff on all procedures for biological sample collection including slide preparation for microscopy examination. Training consisted of classroom sessions followed by supervised field training and a pilot of the procedures at two provider sites. Please see Appendix 11 for details of the training.

2.8.4. Special Training -procedure for psychological screening using the General Health Questionnaire (GHQ-12)

Prof. Nimesh G.Desai, a senior psychiatrist and Head of the Department of Psychiatry at the Institute for Human Behaviour and Allied Sciences, New Delhi, trained the field staff in use of the standardized Hindi translation of the 12 item version of the General Health Questionnaire (GHQ). Training consisted of classroom sessions followed by supervised field training in which each researcher was observed and provided feedback in the process of administering the GHQ. Please see Appendix 12 for details of GHQ training.

2.8.5. Special training to conduct patient provider observations and to strengthen inter rater reliability of the observation tool

Dr. Ravi Verma, a psychologist with expertise in sexual health research, Dr. Deoki Nandan, a community medicine specialist, and the Study Coordinator trained the field staff in use of the observation tool. This was done during a workshop that also sought

to reach a consensus on the details of behaviours that would be observed under each of the interpersonal skill elements (Table 2.3). Staff were first trained in the classroom to observe these behaviours using role plays and feedback. Researchers then went to the field in four pairs to observe four providers, with each member of each pair making his or her own observations. Back in the classroom, each pair discussed and reconciled any differences in their provider observations. This was done to increase inter-rater agreement amongst the field researchers. It has been found that a significant increase in inter-rater agreement occurs after the first training session, and that subsequent sessions may not necessarily increase the agreement further[150]. In place of further training sessions, the Study Coordinator and the trained Field Research Manager observed and supervised each field researcher in their observations and provided feedback to improve the quality of observations, especially in the initial period of Phase II observations.

2.8.6. Data gathering and management

Approval of ethical considerations in the study

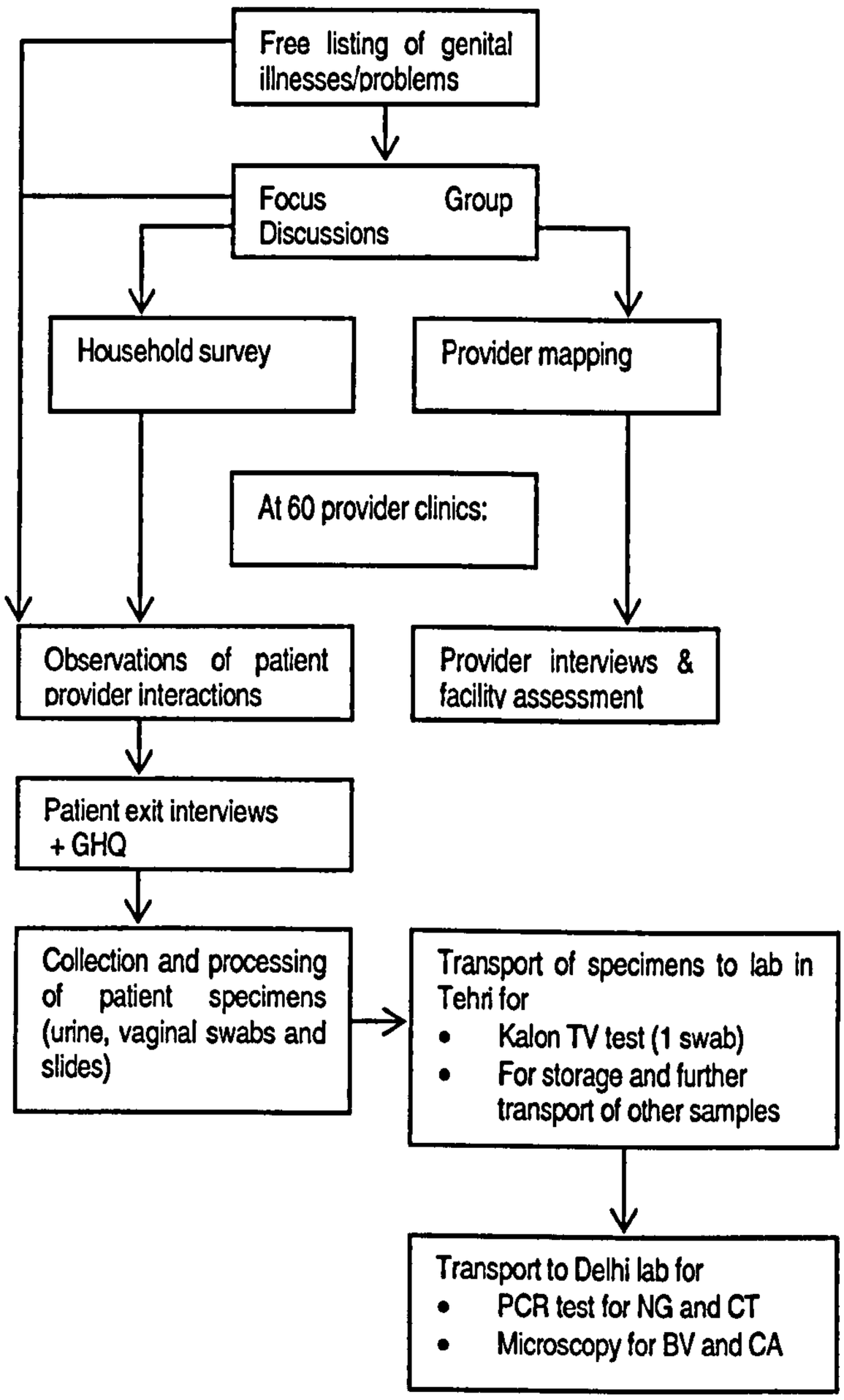
During the project approval stage, ethical considerations were worked out and information sheets for obtaining verbal informed consent from patients, providers and community members, were developed. These were reviewed and approved by the Institutional Review Board of the Population Council, by a local Ethical Review Committee in Tehri and by the Research Ethics Committee of the London School of Hygiene and Tropical Medicine (vide Application number 863, approved 23/05/02).

Research subjects who were included in this study gave their full and informed consent to participate. To obtain informed consent from study participants, field researchers explained to them, simply and comprehensively, the purpose of the study and of the procedures involved. (Refer Appendix 13 for informed consent sheets). They also assured them of preserving the confidentiality of all personal information. To assure subject confidentiality, the research procedures delinked individual identities from the personal information that was obtained from individuals, including laboratory results.

Identities were matched with personal details only for specific purposes such as patient identification for treatment provision, and this information was handled only by reliable research staff.

Sequence of research activities

FIG 2.4. A FLOWCHART OF RESEARCH ACTIVITIES:
Interconnections and Sequence



Phase I

An essential ingredient of all the research procedures was to establish trust and rapport with providers, communities and individuals. The research teams approached village communities by first enlisting the help and cooperation of key community members such as the village pradhan (headman), a familiar figure such as a teacher or a health worker, or even a health provider practising in the village. Relevant study information was shared with these influential community members and their queries were patiently resolved. Research in each community was initiated in this way.

The initial activities conducted were the free listing interviews and the FGDs, followed by provider mapping and the household survey. Details of all the tools have been provided earlier (see Sections 2.4 and 2.5). Researchers of the same sex as the respondents conducted the free listing, household interviews and facilitated the FGDs. Female FGDs were facilitated by the Study Coordinator and the Field Research Manager. Male FGDs were facilitated by the head of GCDWS, a communications consultant, and one of the male field research assistants with some experience in conducting FGDs. Informed consent from participants preceded all these activities.

To map providers, the research teams through community interaction, identified as many providers as possible who were providing health care services in the villages. These included all private providers who were not qualified in modern biomedicine. Nonetheless, the names and locations of private qualified allopaths- those with a formal degree in biomedicine- wherever seen were noted. Interviews were held only with the former group. During the mapping interview, researchers also asked providers for their consent to participate in the later research procedures, should they be selected in the sampling process. Those who consented formed the final list of providers from where the provider sample was drawn for Phase II research processes.

Although quite intensive, the provider mapping exercise may still not be considered as completely exhaustive. To thoroughly explore and map each and every type of health

care provider in every community (including magico-religious providers) would have required an inquiry of far greater depth and intensity, well beyond the scope and resource limitations of this study. This study concerned itself with those providers who were clinic based, in full time or nearly full time practice, and did not possess a formal professional qualification in modern allopathic medicine.

Phase II

Clinics of 60 sampled providers formed the sites for Phase II of the research. Teams of male and female researchers were stationed at each provider clinic for a period of 7-10 days. As male and female patients came to these clinics to seek care for symptoms suggestive of an RTI/STI (that were compiled through the free listing) providers asked them for their initial consent to participate in the study, and then called in a researcher of the same sex as the patient. The researcher provided a more detailed explanation of the study and, if consent was obtained, observed the entire interaction between the provider and patient. The researcher then conducted an exit interview with the patient and administered the GHQ. Next, the patient was instructed on providing his/her biological samples: 3 self-administered vaginal swabs if a woman (including one Dacron swab and two cotton swabs) and first void urine if a man (see details of the process in the next section). A few days after being at the clinic and establishing rapport with the provider, the researchers also interviewed the provider, and conducted a facility assessment of the clinic.

Patient specimens were processed and transported for laboratory investigations, as described in the next section:

2.8.7. Laboratory procedures

MALE SPECIMENS:

Specimen collected: First void urine (FVU) or first portion of urine passed after a 2 hour gap. The patient was instructed to half fill a sterile 100ml wide mouth urine collection container with the very first portion of his urine. The patient should not have passed urine for 2 hours before providing the FVU. If necessary the patient was asked to wait for 90 minutes before giving the sample (after getting his co-operation by explaining why this waiting was necessary). During the course of the study, 7 male patients had to be asked to wait for 90 minutes as they had urinated just prior to the observation. The patients waited willingly as they were convinced properly by the research staff who had been instructed to do this well by the microbiologists who helped set up the laboratory procedures.

The first portion of urine collected after a long gap contains a large organism inclusion count which contributes to best practice for testing. However PCR tests have been been found to be extremely sensitive even with urine samples of entirely asymptomatic men who have low organism shedding in their specimens[145]. Thus if any of the men had urinated for even a little less than 90 minutes (and not been able to recall the time accurately), it is unlikely to have reduced the sensitivity of the test and changed the test results from negative to positive.

Processing, storage and transporting: The 100 ml urine container was tightly screwed and sealed and labeled with the patient's laboratory number. This 100 ml container was placed in a zip-lock bag and placed in a cold thermocol box with gel packs. The box was transported to the laboratory of the Christian Hospital in Chamba.

At the hospital laboratory: The urine sample was placed in a -20°C deep freezer immediately, later to be transported to Auroprobe Laboratories in Delhi, in cold thermocol boxes.

At Auroprobe, New Delhi: The urine specimen was centrifuged. The pellet was used for the diagnosis of Neisseria gonorrhoea and Chlamydia trachomatis using state of the art PCR (Polymerase Chain Reaction) methodology with the Roche Amplicor CT NG test kit, Germany.

FEMALE SPECIMENS:

Specimens collected: One self administered high vaginal swab with a Dacron swab (with a soft Dacron handle, and a cotton tip). Two self administered high vaginal swabs with cotton swabs.

A female researcher unpacked the swabs and placed them in a firm container with the swab facing upward. The patient was instructed to insert the sterile swabs, one by one, starting with the Dacron swab, carefully into the vagina past the labia to a distance of about 6 cm (1/2 swab length), hold in that position to a count of 10 and rotate once before returning each swab to the transport case. She was requested not to touch the tip of the swabs and to place each swab back into the container after use. In case the vagina was dry women were asked to moisten the swabs using sterile saline water. Female researchers offered help and assistance if needed.

Processing, storage and transporting to the hospital lab:

Once all 3 swabs were obtained, the researcher inserted the first swab (Dacron) in a sterile 2 ml screw cap container. Before the tip could reach the bottom of the screw cap container, the stem of the swab was broken. The tip fell into the container and fitted into it. The container was screwed tightly and labeled with the patient's individual lab number. The 2 ml container was placed into a zip lock bag and this was immediately placed into a cold thermocol box.

The second swab (cotton tipped) was used to make a smear on a slide by rolling the swab gently on the slide to cover an area of about 1 x 1 cm2. The smear was air- dried

and heat fixed by passing it over a flame from a spirit lamp, three times. The slide was labeled with the patient's lab number and placed in a slide transport box.

The third swab (cotton tipped) was put in the buffer solution of the Kalon latex agglutination test for trichomoniasis, mixed vigorously without spilling the buffer fluid and squeezed against the walls of the 2 ml container to expel the contents of the swab into the buffer. The swab was discarded after this. This Kalon buffer container was also stored in the thermocol box.

The thermocol box and the slide box were transported to the hospital lab in Chamba.

At the hospital lab:

The 2 ml containers containing the dry Dacron swab tips were stored immediately at –20°C, later to be transported to Auroprobe Laboratories in thermocol boxes, to be used for PCR tests. The slides were stored separately in another slide box, also to be sent to Auroprobe Laboratories later, to be gram stained for Bacterial vaginosis and candida.

The 2 ml container with the specimen in Kalon buffer was shaken. The Kalon latex agglutination test was performed on these specimens, according to the manufacturer's instructions. Thereafter the container was stored with the remainder of the Kalon buffer, in a freezer. 10% of these containers were later sent to Auroprobe Laboratories, for quality control.

At Auroprobe:

The slide was gram stained for the detection of Bacterial vaginosis and Candida albicans, using microscopy (with Nugents scoring criteria for BV).

The dry Dacron swab was used for the diagnosis of Neisseria gonorrhoea and Chlamydia trachomatis using PCR methodology (Roche Amplicor CT NG test kit, Germany).

The Kalon buffer was used to conduct quality control on the Kalon test done in the hospital lab (only 10 %).

2.8.8. Quality control of laboratory tests

For quality control of the laboratory results, Auroprobe sent 10% of the PCR samples (male and female together) and the slides, to a WHO approved laboratory in Goa, affiliated to the Sangath Society, Goa. The Goa laboratory ran a second PCR for Chlamydia and Gonorrhea on the quality control samples and also re-read the gram stained slides for bacterial vaginosis and candida. Selected samples included all the positive cases and a random selection of the negatives. Results were perfectly matched on the PCR swab samples with a slight discordance on the PCR urine samples. However as this discordance was confined to a few of the originally positive results showing up as negative in the quality control run (and not the reverse), it was decided to accept Auroprobe's original PCR results.

There was a greater difference (nearly 50 %) between the two sets of readings (Auroprobe and Sangath) for bacterial vaginosis and candida. Dr. Beryl West, a senior microbiologist, was consulted and helped explain that the discordance arose from a differential recognition of lactobacilli in the slides, due in part to a lack of clarity in some of the slides. Dr. West re-read all the 197 slides and these results were accepted as the final ones for bacterial vaginosis and candida.

Auroprobe performed a quality control run on 10% of the Kalon test samples from the Agra centre and the hospital lab. 10% of the originally positive results were negative during the quality control run; as this was an acceptable discordance, it was decided to accept the original results of the hospital lab.

2.9. Data analysis

2.9.1. Qualitative data

The FGDs were taped and later transcribed and translated. A preliminary manual analysis identified the key 'quality of care' themes or categories that emerged from the discussions; these were used to construct some of the more specific questions in the household survey. Later, the author analysed the data thematically and in-depth. Data driven themes were explored within the thematic boundaries imposed by the research questions. These are shown in Table 2.5 below.

Table 2.5. Qualitative themes and sub-themes in the data

Themes determined by the research questions	Corresponding sub-themes that emerged in the data.
Perception of reproductive tract or genital morbidities	Terms used; descriptions of symptoms; perceived causes; perceived consequences; attitudes and views
Care seeking and decision making	Perceived provider mapping and categorization; views on private and public providers; first actions and sequence of treatment seeking; how and why are decisions around care seeking made?
Perceptions of providers quality	Views on a good doctor for reproductive problems; reasons for going to a particular provider: reasons related to providers' perceived technical skills and reasons related to providers' perceived interpersonal skills, other reasons related to providers' costs, accessibility, gender and relationships

Data was then fragmented and organized in matrices corresponding with each of the sub-themes. It was analyzed and written in relation to the sub-themes.

2.9.2. Quantitative data

All quantitative data were double entered, checked and validated in Epi Info software (version 6.04d, January 2001). Open ended questions were either post coded and entered in Epi Info or analysed qualitatively. Quantitative data were analysed using Stata (version 8.1 for Windows).

Frequencies and percentages were calculated for the symptoms and infections. Positive predictive values of symptoms (included in the syndromic management guidelines) for infections were calculated. Associations between symptoms and GHQ caseness were analysed using logistic regression with GHQ caseness as the outcome variable and symptoms as the explanatory variables. Associations between infections and sociodemographic variables and those between GHQ caseness and socio-demographic variables were also analysed using logistic regression, wherever sample sizes were sufficiently large, and using chi square or F tests where sample sizes were smaller. Outcome variable for infection was the presence of any of the 5 infections. Outcome variable for GHQ caseness was a score above 2 on the GHQ questionnaire. Independent socio-demographic variables included age, education, marital status, occupation and income.

GHQ scoring and analysis

Binary scoring was used for questions on the GHQ with 0 signifying absence of illness and 1 signifying presence. A threshold score of 2 was chosen (i.e. all those who scored 2 and above were considered cases). The threshold score is the score at which the probability that an individual may be a case exceeds 0.5[133]. Studies using the GHQ in different Indian settings have reported varying threshold scores ranging from 2[136,151] to 3[152] to 6[153]. Such variation in thresholds across different settings has been partly explained by Goldberg[153] as caused due to variation in the discriminatory power of the different items, and the GHQ user's guide recommends one's own validity study as the safest option to arrive at an optimum threshold score (at which sensitivity and specificity

are highest). However, as it was not possible to conduct a validity study with the present study population, the threshold score of 2 was chosen as it was closest to the median value of 1. Goldberg recommended that the mean (or median) GHQ score for the whole population of respondents provides a rough guide to the best threshold[133]. At lower scores the sensitivity of the instrument increases at the expense of its positive predictive value and vice versa. As this was a research rather than a clinical detection setting, a lower score was selected for its greater sensitivity and inclusiveness.

Analysis of provider observations

Structural aspects of quality

Providers qualifications: Providers' reported qualifications and institutions from where these had been obtained were reviewed against the official list of institutions and qualifications recognized by the Central Council of Indian Medicine, a statutory body under the Government of India, Ministry of Health and Family Welfare (website: www.ccimindia.org). This body, set up under the Indian Medicine Central Council Act of 1970, is responsible for regulating the education of Indian systems of medicine in India.

Providers' knowledge: Frequencies and percentages were calculated for correct responses on each question and for the total of all correct responses per provider. Fishers test was used to test for any significant differences between providers of different qualifications

Accessibility and physical environment of facility: For the selected items on the facility assessment questionnaire (location of clinic, distance from home, provision of privacy for examination and consultation, presence of an examination table, presence of speculum, gloves and condoms in the clinic), frequencies and percentages were calculated (for 'distance from home', a mean distance travelled by all patients of each provider was calculated). Depending on the numbers of responses, Chi square or F tests were used to test for any significant differences.

Charges for treatment: Total charges for each patient were calculated by adding the cash amount paid upfront by the patient and any credit amount that the patient would pay later. The mean of this total charge was calculated for each provider.

Process of quality

Scoring and analysis of technical criteria:

For each of the six selected criteria, providers received a score of 1 if they performed the procedure at all, and a score of 0 if they did not perform the procedure. As WHO does not distinguish between the significance of these procedures relative to one another, all six procedures were assumed to carry the same weight.

Mean scores were calculated for each procedure per provider from the total number of cases observed per provider. An overall mean score for technical performance was also calculated for each provider.

This technique of deriving a mean disease management score has been used before in studies of technical quality of care in developing countries[115]. On the other hand, some studies that have evaluated STI services or syndromic management guidelines[154-157] have used a patient level analysis that does not combine the different patient scores to arrive at mean provider scores. However, as the objective of the present sub-study was to evaluate providers' overall quality of care, the analysis had to utilize mean scores of all the cases seen by each provider, rather than analyze individual patient level scores.

Drugs dispensed: Types of drugs dispensed were coded and means were calculated for number and type of drugs dispensed. Drugs and their doses were analyzed manually to identify the correct drugs and the providers who dispensed them.

Scoring and analysis of interpersonal skills

Field researchers were trained to observe and score providers on the 8 interpersonal skills. To standardize the observations, each item was broken into a set of two or three distinct, observable behaviours and rated on a scale of 0-2. The scoring used was: 0= skill not performed at all; 1=performed moderately; 2=performed well.

A mean score for each skill per provider was calculated by adding the same skill scores for all the patients per provider and dividing this total by the number of patients per provider.

Tests of associations

Providers' technical quality and interpersonal quality were analyzed against selected provider characteristics as well as patients' characteristics[157]. Numerical values of technical and interpersonal quality formed the outcome variables.

Provider related explanatory variables included

Providers' background: age, qualification, attachment with a qualified biomedical doctor, years of experience, knowledge
Economic incentives: average treatment charges levied
Physical environment of clinic: availability of privacy for consultation
Available equipment: speculum and condoms

To reiterate, many of these variables had also been included under the structural elements of quality. Such overlaps have been noted in the literature on quality where provider and clinic related aspects have been recognized both as structural elements of quality[61] as well as factors influencing providers' technical quality[7] and/or their prescribing behaviour[115,116].

Patient related variables included gender, age, education, marital status, income group and occupation. All these explanatory variables were grouped into meaningful categories that distinguished between distinct groups without losing much of the original information (e.g recognized/unrecognized or upto 30 years/ 31 to 40 years / more than 40 years).

Linear regression was used to examine associations between the numerical outcome variables and the grouped explanatory variables. Explanatory variables were grouped rather than analysed as numerical variables as not all relationships could be assumed to be direct linear ones. Categorizing explanatory variables was thought to be a useful strategy to examine how relationships might change differently over different categories of the same variable like 3 different age groupings, for example. Logistic regression was not used as the sample sizes for variables like qualifications did not have sufficient power for a robust comparison and in addition, this model of analysis would have required a categorization of the numerical outcome variables, resulting in loss of some of the original data.

Outcome: Patients' open ended responses were analyzed qualitatively by identifying, grouping and analyzing common themes.

2.10. Author's personal contributions to fieldwork

The author was Study Coordinator for the research. She took primary responsibility for developing the tools and for training and orienting the research staff. Her major role was to ensure quality of the research procedures and their smooth and timely implementation. To do so she, along with the Field Research Manager, extensively supervised field work at all stages. Besides the pilot field work, she facilitated 3 female FGDs, interviewed 8 women in the household survey, 5 providers in the provider mapping, 6 provider interviews and facility assessments, and personal observations of 4 providers and 8 patients. During Phase II research procedures she directly supervised field work by research staff for 10-15 days each month for 4 out of 6 months.

Chapter 3

HEALTH AND CARE SEEKING IN TEHRI GARHWAL

> 'Like I said before, this disease is hidden behind a curtain. If we tell anyone he will insult us and say something. That is why there is hesitation and one does not tell anyone. Then when the disease increases, or else if someone tells him that now you should go and show someone, only then he will go to a doctor.'
>
> (Focus group discussion, married men-MM1)

This is the first results chapter. The focus here is on the study communities, their perceptions of genital illnesses and care seeking for these. Qualitative study data formed the basis of this chapter: 8 focus group discussions with men and women and with adolescent boys and girls, open ended questions in 150 household interviews with men and women and 367 exit interviews with male and female symptomatic care seekers at provider clinics in the study area. Quantitative data supplemented the qualitative data wherever possible and required. The chapter provides a detailed description of the study communities, an analysis of their illness perceptions, accounts of patterns of care seeking and an identification of factors that influenced people's decisions about when and where to seek care.

3.1. A profile of the study communities

Infrastructure and facilities

Villages were usually small and sparsely populated (please also refer to Table II in the Introduction chapter for population size of villages). They were typically located away from the main arterial road and could be reached either on foot or by leaving the main road and driving along precarious mountain tracks graveled with uneven stone. Transport was limited. On occasion one glimpsed an ageing local government bus

heroically chugging up the winding gradient. But this was once, perhaps twice a day. For the most part, transport needs were met by privately operated open jeeps crowded with cargo and passengers. Whether public or private, the last vehicle, as people in several remote villages told us, left the village around mid-day. To go into the nearest town for any reason, even for an emergency, one had to wait around for the next day's trip.

Small market places located within easy walking access of a group of 3-5 or more villages, met the inhabitants' essential needs through a standard set of shops: a grocers' selling condiments and basic toiletries, a tailor's shop, a tea shop, an electric works repair shop, perhaps a videographer's specializing in marriage videos and one or more private health practitioners' clinics.

For men and women interviewed in the focus group discussions, poor infrastructure and lack of basic facilities were commonly occurring themes, especially in the more remote areas. Women in particular expressed the pressures of their daily existence in terms of the resource constraints:

> R1: Every home should have water.
> R2: ... .Our own latrine, bathroom.
> R3: We do not have wood (firewood). There is no jungle (forest) also.
> R1: The jungle is also far. If you go to the other side, all folks have been given a gas, they have been given everything... here there is no gas, nothing.
> R: Water does not come to the village. It takes the whole day for all of us to fetch water.
> (FGD, Married women-MW2)

Nonetheless, even with limited infrastructure and facilities, women showed encouraging signs of self-reliance. In a remote village, that in spite of its remoteness, served as an economic hub for several surrounding villages, we came across a naturally occurring group of ten women members of a local self-help group. Semi-literate and with

conversational ease only in the local Garhwali language, they had traveled there to deposit their savings in the local bank. They sipped cups of sweet milky *chai* (tea) in a tiny tea shop as they chatted and waited for the last bus back. This is where we found them and held a short and valuable, though incomplete, discussion with them. They all had to rush off when it was time for the bus to go. 'There is no road near the village' one of them said, 'we have a long way to walk from the bus stop and will reach only late in the evening'. It was around 1p.m when they boarded their bus.

Socio-economic conditions

Photograph 3.1. A house with traditional architecture in a remote Tehri village

At first sight most villages contained an assortment of houses: some more modest, sparse and impermanent than the others. The better off families lived in brick and concrete structures. According to the household survey, 36 % respondents lived in houses made of impermanent material such as mud and stone, 27 % lived in mixed, semi-permanent constructions and 37 % lived in permanent and sturdy brick houses. Closer to the plains,

it was more common to find modern constructions with flat roofs and distempered walls. Deep in the mountains, traditional architecture was still visible as well as use of traditional and locally available building material such as wood, stones and mud (see photograph 3.1).

The type of construction material used in the households, together with ownership of selected household assets (based on Filmer and Pritchett, 1998) was used to create three different socio-economic groups that roughly corresponded with Filmer and Pritchett's[158] income groups: a bottom 40 %, a middle 40 % and a top 20 %. With this categorization, 35 % of the respondents belonged to the bottom bracket (low SES) ; they lived in houses made of impermanent material and owned just a radio (see Table 3.1). 40 percent belonged to the middle bracket (middle SES); they lived in semi-permanent houses and owned a radio and/or a television. The top 25 % of the respondents lived in the most permanent dwellings and owned a sewing machine and/or a two wheeler scooter or motorcycle (high SES).

Table 3.1: profile of household survey respondents

Socio-demographic Characteristics	Males N=75	Females N=75	Total N=150
Age			
15-25yrs	17(23%)	17(23%)	34(23%)
26-35yrs	33(44%)	35 (46%)	68(45%)
36-49yrs	25 (33%)	23 (31%)	48(32%)
Education			
Never been to school	5 (7%)	49 (65 %) **	54(36%)
Studied up to class 8	28 (37%)	12 (16%)	40(27%)
Studied beyond class 8	42 (56%)**	14 (19%)	56(37%)
Marital status			
Currently married	63(84%)	67 (89%)	130(87%)
Unmarried	12 (16%)	6 (8%)	18(12%)
Widowed	0	2 (3%)	2(1%)
Occupation			
Housekeeping	2 (3%)	12 (16%)	14 (9%)
Agriculture	32 (43%)	56 (75%) **	88 (59%)
Informal sector- unskilled or semi skilled	13 (17%)	0	13 (9%)
Employed -Pvt/govt sector	16 (21%)	1 (1%)	17 (11%)
Unemployed/student	12 (16%)	6 (8%)	18 (12%)
Socio-economic status			
LOW (Impermanent housing material; radio only asset)	26 (35%)	26 (35%)	52 (35%)
MIDDLE (Semi permanent housing material with a radio and/or a TV)	27 (36%)	33 (44%)	60 (40%)
HIGH (Permanent housing material with a sewing machine &/or a two wheeler)	22 (29%)	16 (21%)	38 (25%)

P <0.001

Note: 3 women and 4 men refused to be interviewed in the household survey. Their socio-demographic characteristics were not any different from the overall profile of respondents shown in the above table.

A similar categorization of the 367 care seekers at the 60 provider clinics was based on their approximate reported monthly income (see Table 3.2). The 3 income groups that were thus formed included 37 % respondents with a monthly income of Rs. 1000 or less

(low SES), 38 % with a monthly income between Rs. 1000 and Rs. 2000 (middle SES), and 25 % with a monthly income greater than Rs. 2000 (high SES).

The 367 clinic attendees were not questioned on their household assets, so a direct comparison with the household survey respondents' SES groups is not possible. Nonetheless, using a similar three income group categorization (high, middle and low) for both sets of respondents provided a comparative picture of the two groups.

Table 3 .2 : Profile of male and female care-seekers at 60 sampled provider clinics

Socio-demographic characteristics	Males N=168	Females N=199	Total N=367
Age			
15-25yrs	32 (19 %)	28 (14 %)	60 (16%)
26-35yrs	73 (43 %)	98 (49 %)	171 (47%)
36-49yrs	63 (38 %)	73 (37 %)	136 (37%)
Education*			
Never been to school	34 (20 %)	153(77%)*	187 (51%)
Studied upto class 8	78 (47%)	35 (18 %)	113 (31%)
Studied beyond class 8	56 (33 %)	11 (6 %)	67(18%)
Marital status *			
Currently married	139 (83%)	185 (93%)	324 (88%)
Unmarried	28 (17 %)	1 (0.5 %)	29 (8%)
Widowed	1 (0.6 %)	13 (6.5 %)*	14 (4%)
Occupation*			
Housekeeping	2 (1%)	33(17%)	35 (10%)
Agriculture	39 (24%)	155 (78%)*	194 (53%)
Worker informal sector	78 (46%)	7 (4%)	85 (23%)
Employed-Pvt/govt. sector	44 (26%)	4 (2%)	48 (13%)
Unemployed/student	5 (3%)	0	5 (1%)
Household income			
LOW Upto Rs.1000(approx. US $ 20)	57 (34 %)	79 (40 %)	136 (37%)
MIDDLE Rs 1001-2000(US $ 20.1-40)	73 (43 %)	66 (33 %)	139 (38%)
HIGH >Rs. 2000 (> US $ 40)	38 (23 %)	54 (27 %)	92 (25%)

* $p < 0.001$

In the focus group narratives, people were aware of socio-economic differences, and attributed different types of health seeking behaviors to these differences ("... *these are rich*

people, we are poor people."). Even the so called better off only appeared to be relatively so; money, or rather the lack of it, was a constantly recurring theme in most of the FGDs, especially in the context of care seeking:

> R5: Those who have money they take their patient immediately for treatment.
> R7: Those who have no money may even die before seeking treatment from any doctor at all.
> (FGD, Married men - MM1)

Domestic agriculture and agriculture related activity was another commonly occurring theme in the FGDs. Data from the household survey and exit interviews showed that a significantly large proportion of women (75 % and 78 % respectively) were engaged in domestic agriculture (see Tables 3.1 & 3.2) A lesser but fairly substantial proportion of the men too were engaged in agriculture (43 % household survey and 23 % exit) or other informal work (17 % household survey and 46 % exit).

Evidence of subsistence agricultural activity - small terraced fields with women tending the crops - were common to behold. Entering a village in Jaunpur to conduct FGDs, we were greeted by the sight of cobs of corn hanging in bunches from the wooden trellis work of traditional houses. Once dry this would be ground into maize for local consumption.

FGD participants talked extensively about their reliance on different types of locally grown herbs and roots for home remedies. From the accounts of women it was apparent that their lives were closely intertwined with the fields and the forest: fetching firewood, grazing the cattle, tending their fields. They attributed certain types of illnesses to working in the fields (*dukhnas* or mosquito bites while cutting grass in the rainy season), they also attributed women's lack of literacy to their demanding roles in the forest and the fields.

Literacy and gender issues

In general, men and boys who attended the FGDs had higher literacy levels as compared with women and girls. Data from the household survey and exit interviews showed more striking disparities in the literacy levels of men and women. A majority of women in both the surveys (65 % household and 77 % exit) had never been to school, as compared with a much smaller proportion of men (7 % household and 20 % exit). These were strong statistical differences ($p < 0.001$).

Ambivalent views towards education emerged in FGDs with the female groups. Adult women held education in respect although they were not entirely sure how education would interfere with the socially sanctioned roles for their girls when they grew up. They perceived themselves as uneducated and therefore inferior in some ways ("... we have not learned to read or write, what do we know...") and yet their accounts reflected an unchallenged but pragmatic acceptance of prevailing gender norms:

> R: So some are studying... .after studying also they have to work in the fields, cut grass, have to be married also. We are illiterate, we cut grass.
> (FGD, Married women- MW2)

Adolescent girls on the other hand were ready to challenge these stereotypes and their accounts reflected their aspirations:

> R: Yes, we said to our mummy... .said to our papa also... .said to our brother also... we fought also
> F: What did you say?
> R: That we want to study, but they did not listen to what I said.
> (FGD, Adolescent girls-AG2)

They also expressed their unhappiness with early marriages for girls although the reason that one of them gave was delightfully unanticipated:

R: Like small small girls are married off. Then by the time they are grown up, they have spoilt their relations with their in-laws, and then they have to marry a second time.

(FGD, Adolescent girls-AG2)

3.2. Lay perceptions of illness

People perceived and classified illness in several ways. These were similar in many respects for commonly occurring general illnesses and for problems related to the genital organs. As genital problems appeared to be embedded in the larger notions of illness and of local health concepts, the findings presented in this subsection have not attempted to fragment and extract genital illness perceptions from general illness perceptions. The focus, nonetheless, is on perceptions of genital illness.

Symptom recognition and terminologies

People usually described illnesses as discrete symptoms rather than as encompassing diseases. It was common in the FGDs to find references to fevers, headaches, cold and coughs, vomiting, watery stools, insect bites, body aches, blisters in the mouth, and kidney stones, rather than to diseases comprising a cluster of symptoms such as TB (Tuberculosis).

Local terminologies, for discrete symptoms or for diseases, described the symptoms- *dukhna* [painful mosquito bites], *pait dard* [stomach ache]; described the etiology- *thand* [a cold due to low temperature], *baalthodh* [a boil due to a hair pull] and sometimes also referred to a body part as a disease - blood sugar [diabetes], appendix [appendicitis]. Although use of traditional and local terms dominated the discussions, a few modern biomedical terms such as TB, Pneumonia and kidney stones entered occasionally.

It was similarly common to find problems of the genital organs referred to as discrete symptoms. Terminology used also typically described the symptoms. These symptoms

could exist singly or in combination with other discrete symptoms and could affect both internal and external reproductive organs. Examples of these discrete symptoms included genital discharge -*dhat* [urethral discharge in men], *safed pairna* [white water in women], *peshab mein jalan* [burning or pain during micturition], *daane, phode, phunsi* [boils and ulcers in the genital region], *khos, khujli* [genital irritation or itch], *kamar dard* ['waist ache' or backache] and *bachchedaani mein soojan* ['swelling in the uterus' in women], *aniyamit mahvari* [irregular menstruation among adolescent girls] and *vaham* ['mis perceptions'] of *sikudan* [penis shrinkage] resulting from *hand practice* [masturbation] among adolescent boys. Adolescent boys also used the term *swapndosh* or 'nightfall' to describe an involuntary ejaculation of semen with an etiology located in erotic dreams or imagery (swapn). Thus the term described the etiology rather than the symptom but it was unequivocally associated with an involuntary semen loss or 'nightfall'.

In fact, both the local terms used for a penile discharge- dhat in men and swapndosh in young boys-while referring to a discharge, actually described larger syndromes that were unique and different from each other. Thus dhat was also associated with a generalized malaise including weakness, lethargy and a feeling of being dispirited; in this way dhat was perceived as both a syndrome and a symptom (loss of *dhatu*) as well as a cause:

> But when a young or growing lad, meaning someone who is 20-25 years... .then they say that he eats and drinks heartily, what could be happening to him all day? The rest of the family is healthy, why is he unhealthy? The reasons may be many, not necessary it is dhat only... only when he declares will it be known.'
> (FGD married men - MM1)

Besides talking about discrete symptoms, people occasionally also referred to full fledged diseases such as *garmi rog* [heat disease], *gupt rog* [secret disease] and AIDS. Garmi rog, described by adolescent girls and married women, consisted of concurrent symptoms that included difficulty in walking, eating, urinating (with reduced urine), blisters on the tongue and blisters in the urethral opening. Gupt rog was mentioned by both men and

women. A married men's group mentioned gupt rog in the context of 'infectious diseases', and although no descriptions of the disease were forthcoming, it was the aura of secrecy surrounding gupt rog, that appeared to have important connotations for men and women, although in different ways:

> Patients suffering from gupt rog, who have a distinct problem, he will go by himself [to a doctor].' 'If he has something, he will not do publicity...that I had such and such disease and I have got treatment for it..'
> (FGD married men, MM1)

> Those gupt rog that women have... about which they cannot tell a (male) doctor...so for that some of them go and show a nurse..'
> (FGD married women, MW1)

Categories of illness

Major vs minor

People categorized illness in two distinct ways. One was with respect to the perceived nature and severity of the illness: *choti moti bimari* [minor illnesses] or *badi bimari* [major illnesses]. Minor illnesses usually included discrete symptoms such as a 'light or ordinary fever' or a 'minor cut ' that could be cured through home remedies or by medicine or first aid provided by the local health providers. Major illnesses were seen as those that could not be cured locally and in particular those that required a surgical intervention such as 'appendix' or 'kidney stones'.

For problems of the genital organs, the major/minor classification appeared to be embedded in the prevailing notions of etiology and consequences. Typically, discrete symptoms such as an abnormal genital discharge, burning micturition and pain in the lower abdomen or waist were considered commonly occurring minor problems and attributed to types of food or drink consumed or work done.

> It happens in summer, due to eating very hot foods like garam masala [a hot spice], too much tea. Too much cold can also lead to pairva.
> (FGD, Married women-MW1)

Infectious vs non-infectious

Major problems associated with the genital organs were perceived as those with an infectious etiology, particularly those transmitted through male to female contact and those that had devastating consequences, such as AIDS:

> Infections like... infections of the kind that spread... .that are very dangerous... .major diseases like AIDS
> (Married men-MM1)

Importantly, the FGDs did not articulate any clear links between 'minor' symptoms like dhat and pairva and major infectious diseases like AIDS. Generally, people believed that minor complaints such as dhat and pairva were quite common among men and women in that region, even though they were not openly discussed, but major infectious diseases were rare:

> According to our information, there is no infectious disease over here. But still we will say that there is dhat etc, which happens in men. Other wise there is no infection over here.
> (FGD married men, MM1)

The minor symptoms of dhat, swapndosh and pairva were typically perceived as non-pathological or non-infective. Dhat was associated with weakness, listlessness and anxiety but rarely with an infection. Swapndosh referred to another kind of involuntary semen loss, but was associated more with guilt and anxiety related to masturbation rather than with an infection. Perhaps recognising its non-pathological nature, some lads even pointed out that there was no treatment for swapndosh. Nonetheless they all perceived it

as a problem. Boys' problems were particularly imbued with psychological concerns that the boys themselves recognized at times as unfounded fears and misperceptions.

In the small but representative household survey (N=150), 32 men (43%) and 44 women (59%) reported experiencing one or more genito-urinary symptoms in the last one year (see Table 3.3). Of these, 15 men and 7 women said they had first experienced their symptoms in the last one year, and details of their care seeking are presented in Fig. 3.2 at the end of this chapter (and described in the next section on Treatment seeking). Men commonly reported dhat (13%) and burning micturition (20%) and more than half the women reported a vaginal discharge, lower abdominal pain and/or burning micturition (see Table 3.3.). Women reported a significantly greater number of genito-urinary symptoms than men ($p < 0.001$)

Table 3.3. Symptoms reported by men and women in the household survey

Symptoms	Men (N=75) No. (%)	Women (N=75) No. (%)
Genital discharge	10 (13)	43 (57)
Swapndosh	9 (12)	-
Genital itching	9(12)	-
Genital ulcers or boils	9(12)	10 (13)
Burning micturition	15 (20)	38 (51)
Lower abdominal pain	-	41 (55)
Reported only one symptom	20 (63)	7 (16)
Reported more than one symptom	12 (37)	37 (84)*

* $p < 0.001$

While people perceived many of these symptoms as commonly occurring, they saw AIDS as a modern disease that was commonly acquired through working and living in the 'big' cities of Mumbai and Delhi, especially by those of a 'lowly' character. Nearly all the focus groups mentioned 'AIDS', a modern biomedical term and although none described clear symptoms, all perceived AIDS as dangerous, communicable and fatal:

I have seen about AIDS. One fellow was working in Mumbai, when he came home he had AIDS... and from him his wife got it and both of them grew thinner and thinner and both died and their children died of thirst and starvation.
(FGD married women, MW1)

3.3. Treatment seeking

Earliest cures: types and sources

Accounts of actions taken in response to illness showed a common hierarchical pattern of care seeking that typically started with the self or family members. Once perceived, illnesses were first dealt with at home, usually with various types of home remedies. This type of first action was typical for 'minor' illnesses-including the 'minor' symptoms of genital problems-that people considered curable through self and local options. Three main types of cures emerged at this level: indigenous home remedies, magico-religious healing and biomedicines.

Home remedies consisted of ingredients that were easily and locally available, such as herbs and roots that grew abundantly, and cost little or nothing. People talked about these herbs, roots and other types of popular home cures with a great deal of familiarity and faith. These remedies seemed to exercise their healing powers in relation to the locally held notions of causality (e.g. cooling drinks for heat related problem such as burning micturition and a nosebleed). Men and women interviewed in the household survey who had not sought care from any provider for a genito-urinary complaint (10 men and 3 women-see Figure 3.2) said they had either done nothing at all or used home remedies to cure themselves.

Local (non-biomedical) cures obtained within the home or immediate village community also occasionally extended to magico-religious healing performed for specific illnesses

and by specific community members with an expertise in specific types of folk healing techniques

> R1: When a snake or some such thing bites, or a scorpion bites... when a spider urinates.. for that they get a *mantar* [chant or prayer] done
> R2: More or less in every village one or two men know about this, more or less.
> (FGD, Adolescent boys-AB2)

Occasionally, biomedicines were also mentioned, especially over the counter analgesics, paracetamols and ointments that reflected a growing interface with the modern pharmaceutical industry and mass media:

> R9: For these minor problems such as itching... everyone knows that you apply "B-Tex"
> R2: Correct. Where is the need to ask anyone? Assuming that I know that I have burning or I have itching, so I will go and get the little box from the chemist's or from someone. Apply it for 2-4 days. One knows that one should not use soap.
> (FGDs, Married men-MM1)

All of these earliest cures could be self prescribed or obtained after consulting with others within the family and village. These included wise old men and women in the family or neighbourhood who were considered knowledgeable about health matters and healing, or other community members with expertise in different types of folk healing techniques.

Subsequent sources of health care

People generally relied on home or self treatment for a few days to a week, depending on the nature of the illness and its perceived severity. If symptoms persisted or increased in severity, it was common practice to approach the nearest available health practitioners who were clinic based, dispensed drugs and often referred to as 'doctors' by community members. Most of these were informally trained independent private providers with unrecognized qualifications. Local government health centers (swasthya kendras),

wherever these existed, were also used by some sections of the community. The few available lady providers such as nurses (also called ANM – the Auxiliary Nurse Midwife) were popular with women and girls, for all types of illnesses, and a husband - wife team of health workers (employed and trained by a health NGO) appeared to be widely sought after by the communities they served in a remote area.

The household survey interviews emphasized the significance of private practitioners in these communities. These are presented in Figure 1 (for general illnesses) and Figure 2 (for genito-urinary symptoms). 38 men and 22 women reported that they had sought care in the last 6 months for commonly occurring symptoms of ill health such as fever, cold, cough, diarrhea, aches and pains and injuries. The first point of care seeking for the majority (25 men and 15 women) was in the pluralistic private sector, predominantly from informally trained private providers (19 men and 13 women -Figure 3.1). Other private sector providers included qualified allopaths (with a recognized degree in biomedicine), private hospitals, providers formally qualified and trained in an indigenous system of medicine such as Ayurveda as well as shops selling drugs such as medical stores and general provision shops. Around a third of the care seekers had sought care from a government provider. From the women's responses, however, it was difficult to distinguish whether the government provider they had first approached was a doctor, a pharmacist, a nurse or even a helper at a government facility.

For problems related to the genital organs women displayed a greater preference for female providers wherever these were available locally, as they found it much easier to share their problems with female providers. In the household survey, 3 out of 4 women who had sought care for a genital complaint, had first approached a government provider, an important reason being that the provider was female (see Figure 3.2).

In the FGDs, men and boys believed that for such problems one needed to approach a 'specialist' who knew everything about such illnesses. However they also expressed their reliance and faith in local providers who would refer them to such a specialist:

R: First we will just go to a doctor nearby, then he will say that you go to such and such place, brother, this cannot be treated here.
R: We will ask the doctor here, you tell us, who should we go to?
(Adolescent Boys - AB2)

Men with genito-urinary complaints in the household survey had sought care only from private providers, trained informally or formally (in an indigenous system).

Figure 3.3 presents key findings from the exit interviews of 367 men and women at 60 provider clinics. A majority of the men (71 %) and a little more than half of the women (54 %) had come to the current clinics to seek external care for the first time for their symptoms. Others (29 % men and 46 % women) reported a previous history of care seeking; around 40 % of these had sought care more than once before coming to the present clinic, a majority in the pluralistic private sector.

3.4. Hierarchies in care seeking

If local treatment options were unsuccessful, people travelled further and further, seeking treatment from providers in bigger towns and cities who they believed possessed higher qualifications and better equipped facilities and hospitals. Distance was associated with better quality care: providers in distant towns and big cities were considered better educated, with better equipped facilities and therefore able to provide better quality and more specialized treatment. From small towns that could be 20-50 kms away from their villages, people travelled to bigger towns and cities that were even further and required large amounts of money. Even in these 'bigger' and 'better' places, there appeared to be a significant reliance on private providers or hospitals as people's accounts revealed:

In our house we first go to Jakhdhar... .to Nirmala aunty or if we do not get better over there, then to Bangali or Virender doctor in Nainbagh (nearest town)
(Adolescent Girls-AG2)

Variations to this common pattern were also expressed, with the local options sometimes superseded in favour of further off 'better' facilities:

> R: Look, it is like this, there is an ordinary/light fever or a minor cut/wound or something like this..for that we can get someone here.
> R5: Especially for an operation we need to go out. ...Or for some other major illness... .like for appendix, etc etc... Now like you have stones... there is Dr. K in Dehradun... or there is Dr S at Dehra Dun. Mostly people go to Dehradun. Or there is Dr J at X Nursing Home in Rishikesh. Most of our people go there – we have greater faith in the "Private".
> (Married men-MM1)

Especially those with greater resources could more easily afford to travel a longer distance at an early stage of the illness.

For genital problems, men and boys believed that they needed to approach a 'specialist' who knew everything about such matters. Although specialists were perceived and interpreted in many different ways (those with degrees, those who have cured many others before, those who are known for these types of cures, those who have it written on the board and those who have been around for quite some time) there was a general consensus that such specialists were not available locally and one had to travel to cities and towns after getting some referral advice from local providers and friends. Women spoke less of traveling far; for them a nearby female provider was the preferred option, or any other nearby provider they could trust and speak freely with.

The FGD accounts also suggested that traveling further for better quality care did not always bring relief, so that even after traveling to a far off hospital in a big city like Delhi, people sometimes came back to where they had started out from. Indeed some of the accounts expressed an element of pride in the abilities of significant local providers in being able to finally mitigate an illness that even a big hospital could not deal with.

Figure 3.3. demonstrated the following aspects of the sequence of care seeking:

a) the key role played by the private sector, particularly the informal sector, in providing first level care as well as care at different stages in the sequence of care seeking

b) that as people sought relief from their symptoms they did not always follow up with the same provider but often moved to another provider in a somewhat random manner

c) that in spite of moving from one to another provider, many care seekers would never encounter a formally qualified or trained provider in their cycle of care seeking.

3.5. Factors influencing care seeking decisions

The decision to first seek care outside the house or immediate community, and the timing of the subsequent action to seek care, depended primarily on three factors. These figured prominently in all of the FGDs and included the perceived severity of illness, available financial resources and the area's road infrastructure and transport network.

Some of the accounts particularly highlighted the crucial role of financial resources in care seeking decisions:

> R2: Sometimes due to lack of money even for minor diseases we do not go to a doctor for several days.
> (FGD, Married men-MM2)

For problems of the genital organs, attitudinal barriers led to significantly delayed care seeking. Men and boys, women and girls talked of their hesitation in seeking care for reasons of secrecy and shame.

> R8: One has to wait quite a long time for this (seeking care). Because first one thinks that it will go away by itself. I should not have to tell anyone. Like I said before this

disease is hidden behind a curtain. If we tell anyone, he will insult us and say something. That is why there is hesitation and one does not tell anyone. Then when the disease increases, or else if someone tells him that now you should go and show someone, only then he will go to a doctor. Now we do not have such types of specialists here so we have to go far.
(FGD, Married men-MM1)

R3: Like if there is a boy who is studying... .most probably he will not tell... if he tells the boys, the boys will make fun of him. So he will not tell. Mostly people hide such problems.
(FGD, Adolescent boys-AB1)

With women and girls, providers' gender posed additional barriers:

Not at all to a man, no matter how nice or sweet natured he may be. Whatever he is like, we will not go to him. We will feel shy of him.
(FGD, Adolescent girls -AG2)

There were also superstitions and local beliefs that menstruating girls should not be given medicines and that swapndosh has no treatment.

At the same time as they talked about delayed care seeking and reasons for these, people also recognized and articulated the dangers and consequences associated with such delays (..his urine stopped and there was a lot of problem..). Some participants also criticized attitudes of shyness and secrecy that came in the way of prompt care seeking. While men attributed these attitudes to lack of literacy, adolescent boys blamed these on lack of communication about reproductive health issues:

What I am saying is shyness... shyness... .openness is not there... .meaning there is no such education in school. They do not tell you about all these things in school, that is why the boys have little openness... .they are not able to open up. ... .in school it is

possible to a small extent... .one can talk to friends, but at home one has to remain in an absolutely 'tight' atmosphere.
(FGD, Adolescent boys-AB2)

3.6. Factors influencing provider related decisions

The lay referral system

The effect of the family and community on early care seeking decisions and where to go to seek care was a common theme evident in all the FGDs. Elders in the home were perceived and accepted as significant decision makers. A group of married women described them as 'guardians' of the household. People also actively consulted other community members about where to go for treatment:

R: Usually, first people will ask (each other), that who should we go to. So (they'll say), yaar [buddy], first you show here only... if the doctor is able to cure, its fine, if he is not able to cure, then you take to some other place.
(FGD, Adolescent boys-AB2)

Even for genital problems, after varying degrees of initial hesitation, (apparent more in men than in women), people did confide in and consulted family and friends usually of the same sex. Communication and consultation across sexes happened only between married couples, and rarely otherwise.

The influence of new knowledge acquired through mass media was also evident:

R: We are watching television day and night... .there are so many different types of ads showing all the time. This (medicine) is for this, this is for that... .
(FGD, Married men -MM1)

Men and boys perceived genital problems as requiring 'specialist' treatment from an educated provider, one who knew 'everything' about the disease. However, their

accounts also revealed that they considered the local providers to be important referral agents who would be able to guide them to the right sort of specialist provider:

> It is like this that first of all we go here locally..that I have this illness..he will say that I will give you first aid. Have a few..2-4 tablets, and after that he gives an address..that in Rishikesh there is such and such doctor, he is a specialist for this. We get treatment from there.
> (FGD, Married men -MM1)

Providers' access and attributes

Easy access to the provider was an important reason in approaching a provider, as stated by many people in the FGDs, the household survey and the exit interviews. These are shown in boxes in Figure 3.1 (top left and right corner) and Figure 3.2 (bottom left hand corner) that illustrate the household survey responses. Table 3.4 provides additional information from the exit interviews that the large majority of men and women traveled roughly half an hour or less, to reach the rural provider clinics that were situated within 5 kms of their homes (77 % men and 81 % women). Most care seekers came on foot (73 % men, 78 % women), and the travel cost them nothing (72 % men and 76 % women). In fact only around 10 % spent Rs.10 or more on the cost of their travel to the clinic. Providers' geographical proximity was the most common reason reported by care seekers for approaching a particular provider (see Table 3.5 and 3.6)

Table 3.4. Distance, time, mode and cost of travel of care seekers at rural provider clinics

	Approximate distance traveled to the clinic < 5 kms	Traveltime < 30 mts	Mode of travel – on foot	Cost of travel-nothing
Men N=168	130 (77%)	109 (65 %)	122 (73 %)	121 (72%)
Women N=199	165 (81%)	141 (71%)	155 (78%)	152 (76%)

Other important factors included the providers' gender (for women care seekers) and other attributes such as the perceived efficacy and low cost of his medicine, provider's

pleasant behavior, and perceived familiarity with the provider (see Tables 3.5 and 3.6, from the exit interviews).

Table 3.5. Important reasons for choice of provider given by men seeking care for genito-urinary symptoms at rural provider clinics in the study sample (frequencies are totals of first, second and third responses)

Responses	Men N= 168 (number of responses)
Close by and accessible	134
Known to me/us	93
Deals pleasantly with patients	59
Always seek treatment from him	46
Always available	41
Gives medicine on credit	33
Provides good medicine, get quick relief	26

Table 3.6. Important reasons for choice of provider given by women seeking care for genito-urinary symptoms at rural provider clinics in the study sample (frequencies are totals of first, second and third responses)

Responses	Women N= 199 (number of responses)
Close by and accessible	131
Known to me/us	95
Provides good medicine, get quick relief	77
Deals pleasantly with patients	69
Gives medicine on credit	41
Speaks our language	40
Always seek treatment from him	36

3.7. Summary of the findings

These were poor rural communities in a process of transition. There was low female literacy and poor infrastructure. Much of the local economy comprised informal agriculture. There was some evidence that older systems and knowledge were giving way to new: women were aware of better living alternatives such as having bathrooms and latrines and the availability of cooking gas; there was also an increasing interface with modern mass media. This transition was visible in their illness perceptions and care seeking as well, which was embedded in traditional health concepts but with increasing

awareness of modern biomedicines and systems. New knowledge about diseases was filtering in.

People's perceptions of genital illnesses could be categorized as infectious or non-infectious, and in general, people did not perceive an infectious etiology behind commonly occurring symptoms such as a genital discharge. Men and boys expressed psychosexual concerns and anxieties related to semen loss.

People relied significantly on home cures in the initial stages. Health care seeking was generally not limited to a single encounter per illness. The sequence of care seeking could be hierarchical or cyclical, typically beginning nearest to home. Costs of care seeking as well as hesitation related to the nature of the problem (shyness, guilt, shame, fear of being insulted) often delayed seeking care from a provider. Local, informal providers played an important role as the first point of contact for treatment as well as advice for a referral. People often moved around in circles seeking relief for their symptoms and many would never encounter a qualified provider at all.

Figure 3.1. PROVIDERS OF FIRST CONTACT FOR GENERAL ILLNESS - FINDINGS FROM THE HH SURVEY

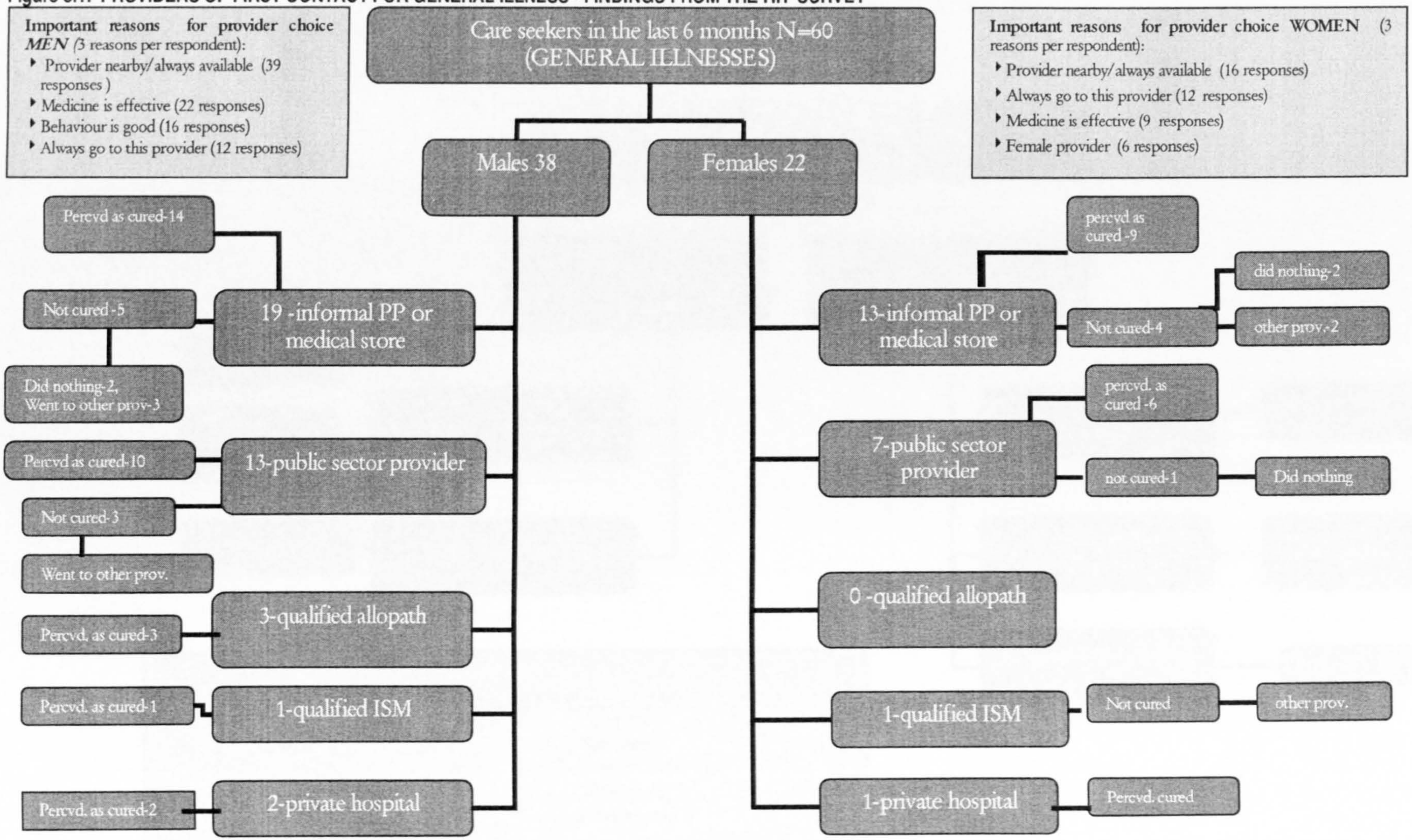
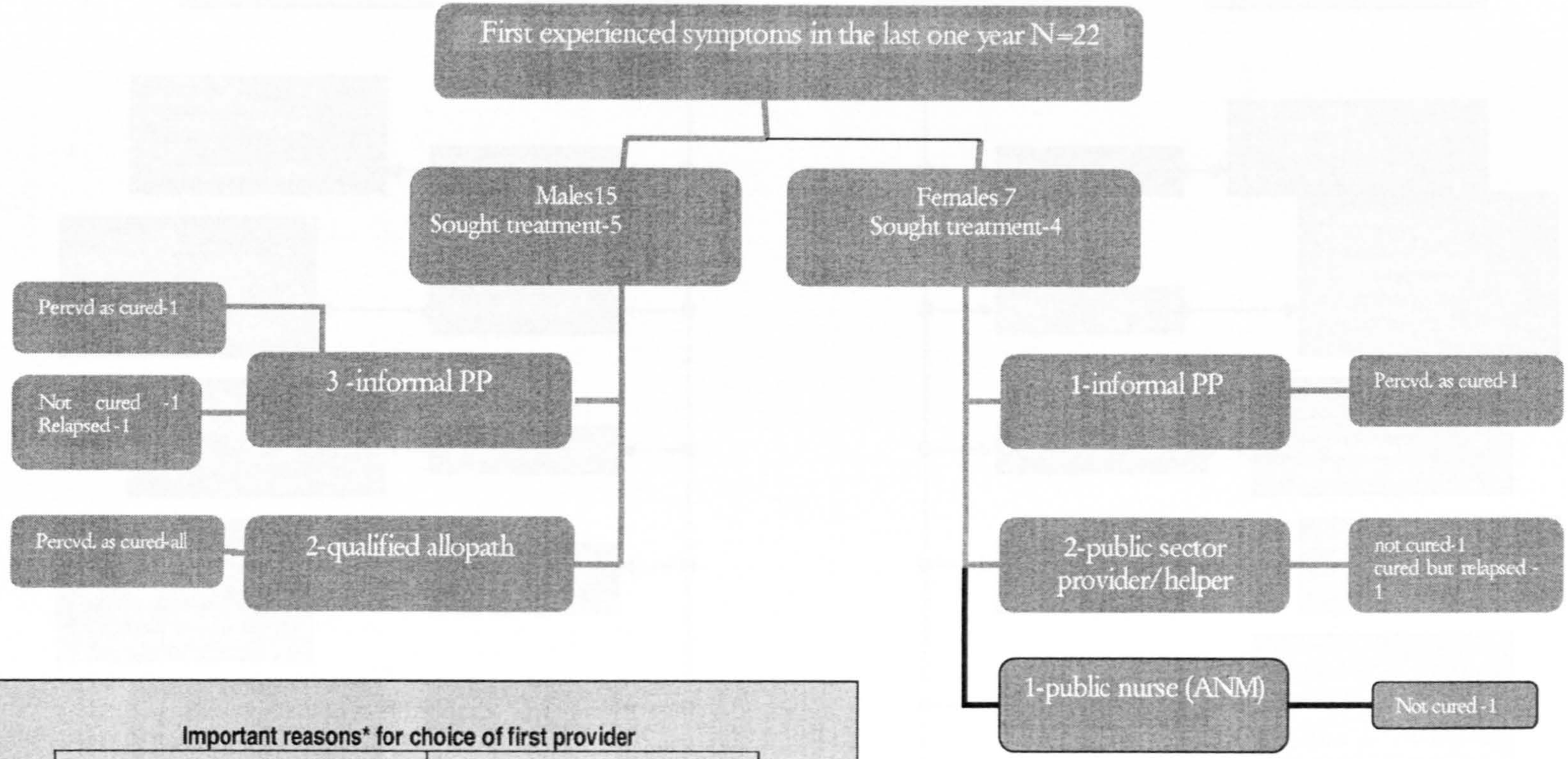


Figure 3.2 . FIRST PROVIDERS FOR COMPLAINTS INDICATIVE OF RTIs/STIs - HH SURVEY FINDINGS



Important reasons* for choice of first provider

Men:	Women:
Close-by (2)	Female provider (4)
Provides good medicine (2)	Close-by (3)
Good behaviour (2)	Low charges (2)
Known personally (2)	

* reasons limited to 3 per respondent

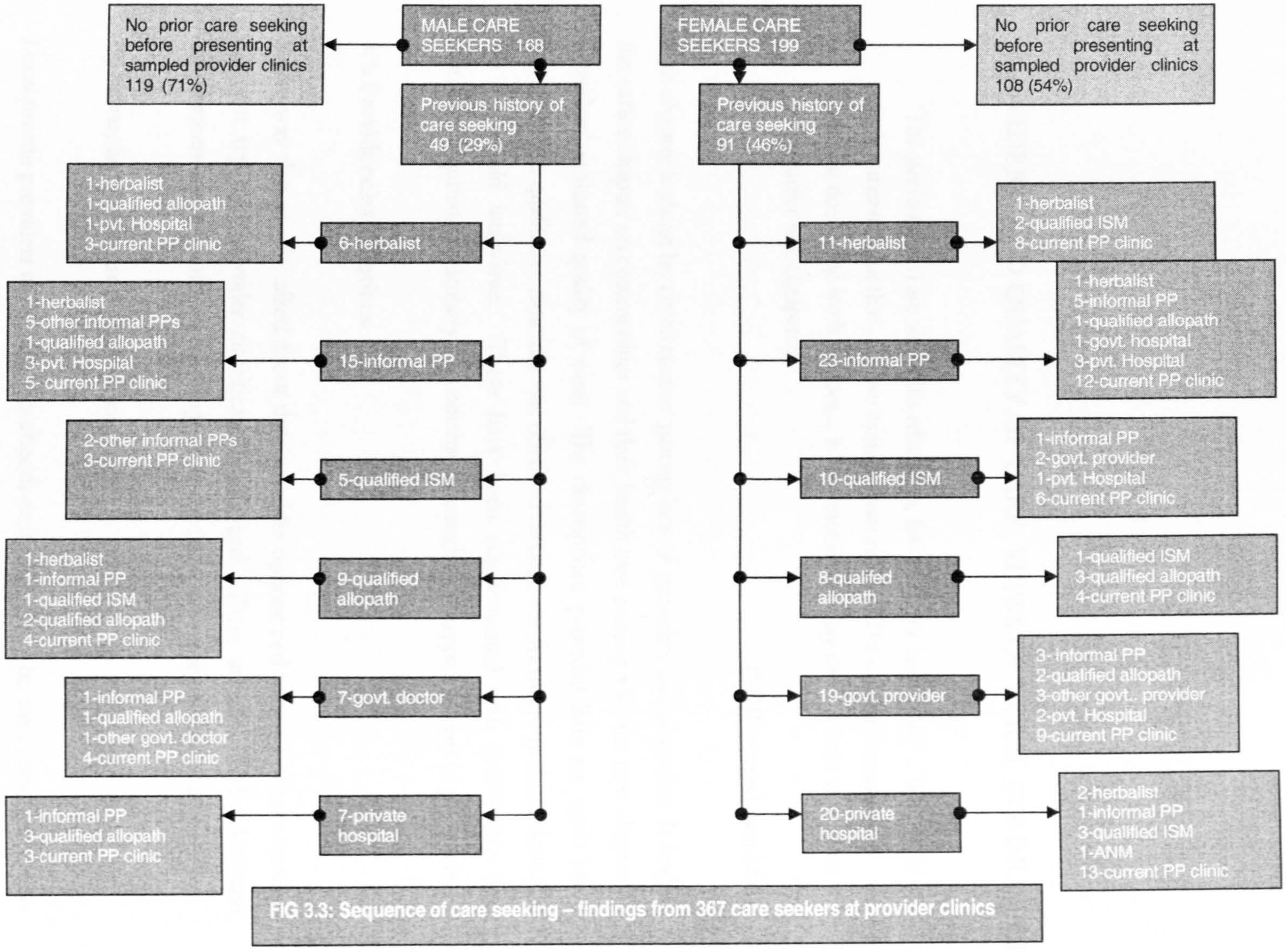


FIG 3.3: Sequence of care seeking – findings from 367 care seekers at provider clinics

Chapter 4

PROVIDERS AND QUALITY OF CARE: VIEWS OF RURAL COMMUNITIES

> 'The *gun* [qualities] are about his education, his work, his knowledge ... But we do not have a measure for that... .so we cannot measure that. The only one measure is what he does... the work he does... if his treatment is okay and if it suits us... ..then we consider him competent.'
>
> (FGD married men-MM1)

This chapter is about lay communities' perceptions of providers and of quality. It bridges the earlier chapter on communities and their health care seeking with the next chapter on providers' evaluated quality of care. The descriptions provided here are again based largely on the qualitative data that was obtained through the focus group discussions and the household interviews. These have been supplemented with quantitative data wherever required, particularly data obtained through the mapping survey of providers.

4.1. Provider classifications

In the way that people talked about their provider options and patterns of care seeking, different types of provider classifications emerged These are described below and supplemented with quantitative findings from the mapping survey wherever appropriate.

By name, familiarity and place of location

Local private providers in the neighbourhood, generally those who were clinic based were referred to by their surnames (Bhatt, Negi, Koriyal, Raturi). Occasionally a 'ji' was added to the name, such as in Bhattji, symbolic of deference and respect for the provider. These could be the providers in the immediate vicinity of the village or familiar and well known providers in a distant small town (e.g., V.J, a doctor in Nainbagh). Providers were

also closely associated with the place where their practice was located. A few *vaids* (traditional Ayurvedic practitioners) were famous by the name of their village (e.g. vaid of Sursinghdhar). Occasionally people referred to famous specialists in far off big cities, using their names and usually referring to them as Dr. so and so (for stones... Dr. K in Dehradun, Dr. S in Dehradun). Mostly, private sector providers were referred to in this way although there was the odd government doctor too, who was called by name, but he also treated patients privately.

People associated bigger towns and cities with more knowledgeable providers and better equipped facilities. Popularly used options for tertiary care were mainly private facilities and providers (biomedical ones) in Chamba, Rishikesh and Dehradun. These towns were more than a 100 kilometres away from some of the villages in this study.

The provider mapping survey carried out in the 6 study blocks documented the presence of 127 clinic based private providers (see the next section for their background) in villages in these blocks. Nearly all (98 %) were male with a mean age of 37.5 years. A majority (64%) had been in practice for more than 5 years in the same location and had well established practices. 60 % were natives of the same block where they practiced. 60% providers also reported that people came to them with non-health matters and discussed family, work related and political issues. Being local residents with long years of practice in their current locations, these providers were more than likely to be well known amongst the local communities: a common reason given by many of the study respondents for approaching them, besides their accessibility and availability.

By perceived knowledge and abilities

Now there are no MBBS doctors here. They are all 'RMPs' and 'BEMS'... meaning the certificate that a doctor gets... when these doctors work under any doctor, then they usually get a certificate from the very doctor they worked under... then they begin to work.
(FGD, Married men-MM1)

People often made distinctions amongst providers on the basis of their knowledge and occasionally also their degrees. In general the local providers were considered less knowledgeable, able to provide treatment for minor but not major illnesses, and indispensable in a medical emergency.

The mapping survey findings showed that out of 127 providers who were surveyed, only 14 (11 %) possessed an officially recognized qualification in an indigenous system of medicine. These included graduate degrees/diplomas in Ayurvedic, Unani or Homeopathic medicine (BAMS, BUMS, BHMS) obtained from institutions registered under the INDIAN MEDICINE CENTRAL COUNCIL ACT, 1970[26]. This Act regulates the professional education of Indian Systems of Medicine (Ayurveda, Unani, Siddha, Naturopathy and Yoga) and Homeopathy in the country.

The majority-111 providers (87 %)- possessed various other types of certificates and diplomas that were not officially recognized and 2 providers did not possess any qualification at all. The different types of unrecognized qualifications[9] included:

- ISM diplomas and certificates obtained form unrecognized institutions. (GAMS, BIMS, DAMS, MAMS, BHAMS etc)
- Electro - homeopathy (BEMS, BEHMS)
- Ayurved Ratan, Ayurved Shiromani, Ayurved Snatak, Vaid Visharad etc
- RMPs/Bangali
- Others –CHW, IHQ, Acupuncture, Naturopath etc
- Other certificates-DMS, BMS, BMD, IAMS, LMPH, ICHMS, HLMS etc

Most providers (90 %) had completed 11 or 12 years of schooling. 79 percent providers had served apprenticeships with other providers as their compounders or assistants,

[9] Researchers were unable to decipher many of the abbreviations used in the qualifications. The team also decided not to probe too muchfor details as this could create an uncomfortable situation with providers.

before setting up their own independent practice. More of the unrecognized/unqualified providers- than the recognized ones- had served apprenticeships with qualified allopaths: 56% as against 36%. All providers (recognized and unrecognized) dispensed drugs and 87 % stocked and dispensed both allopathic and Ayurvedic drugs.

Practices were small with a majority of providers receiving between 5 and 12 patients on average daily. 53% providers said they received more women patients than men and 50 % said they received more child than adult patients. More than 80 % providers reported that patients commonly came to seek treatment for fevers, colds, coughs, vomiting and diarrhea. A majority (95%) also said they received patients with genito-urinary complaints.

By system of medicine and type of illnesses

While providers who dispensed biomedical drugs, or a blend with indigenous medicine, were the most popular for curative care, people also recognized other types of healers and healing systems for different types of illnesses. As described in previous sections, these included magico-religious healers (e.g. who performed chants for insect bites), herbalists (old women who gave special powders for white discharge), Ayurvedic vaids (for special illnesses like 'jaunk' in children or for genital problems like discharge) and providers of other traditional systems:

> His name is Tibbatiya or Tibbeti... .he does Tibbeti medicine
> (FGD, Adolescent girls-AG2)

Accounts of care seeking however, revealed how notions of health and health care seeking were in transition. Traditional systems of medicine were slowly given way to modern biomedicine with its rapid mode of action. The changes were evident in people's own perceptions too. Their accounts demonstrated familiarity with different systems and a weighing of the advantages and disadvantages of each (... *with Ayurvedic treatment, one has*

to wait... with English medicine one gets relief at once) . They described the transitions that they perceived and provided reasons for those:

> R6: First reason for their (vaids' or Ayurvedic doctors') decreasing numbers is the improved facility for transportation that we now have. Earlier we had no roads, it was difficult to move about. Among people who lived far away, if any person fell sick they would go to the closest place there.
> R: Now that we have transport, there are roads in every village, so now we go to a doctor. This is the reason, and also the reason behind their (vaids') decreasing numbers.
> (FGD, Married men-MM2)

To reiterate, there was a general belief particularly among men and boys but also among women, that for problems of the genital organs, one needed to seek care from specialists who practiced in the bigger towns and who were considered knowledgeable about such illnesses (e.g. a 'gynae'doctor) and had better facilities. Boys were especially aware of specialists who advertised their services for various types of genital problems, and it is likely that they were referring to the different types of sex specialists found practicing in busy urban centres who usually advertise treatment for symptoms such as impotence, dhat, white discharge and swapndosh.

By sector – public/private/NGO or charitable

People distinguished between public and private sector providers and facilities. There was also a charitable NGO facility in one part of the study area, referred to as 'community', which the poor were perceived to use . While private providers were usually referred to by their names, a generic term '*sarkari*' (government) or '*sarkari aspatal*' (government hospital) was applied to all government facilities irrespective of whether they were sub-centres, primary health centres or bigger hospitals. In all of the FGDs only one government provider was referred to by his name.

Typically a public sector facility was perceived as less convenient (open only up to 2 or 2.30 p.m) than private facilities and perceived to be used by those who were poor as one paid nothing or a small amount for the medicine. Nevertheless, it was apparent that people had had different experiences regarding payment in government facilities:

> (about sarkari)..one thing is that we don't have to pay but they are careless also... we go there only for minor illnesses
> (FGD, Married women-MW3)

> In the government hospital also they give medicines in private. They are very expensive medicines. Its more costly over there. So we hesitate to go there.
> (FGD, Married women-MW2)

A group of married men expressed their simmering discontent with the functioning of the public sector, particularly of government hospitals. They had seen medicines meant for government supply being sold by private medical stores outside; they provided accounts of the harassment and shabby treatment of patients by hospital staff:

> R6: Patient is on the bed. He is in pain. You tell the nurse or anyone else, she will say... .No brother, my duty hours are over –wait for the next duty nurse or doctor to arrive, and get an injection from the....When our Kandariji was a minister for this area he once raided this hospital. Since then there has been some improvement.
> F: Where was the raid ?
> R:There only-at the hospital. Several times people complained to the minister that we do not get proper treatment there, that the staff does not behave well with the patients. There were also a lot of machines like the ultrasound and similar type of machines that were faulty. Since then they have been more or less fixed. But they charge more money than what is displayed on the rate list – about 10 to 15 rupees extra. And if you do not pay, and say you were number two in the queue for X-ray, they'd push you down to No 10. Or else by the time your turn comes, the X- ray film would be over.
> (FGD, Married men-MM1)

They also offered an explanation for this state of affairs:

> In the government the biggest problem is that (they think) Okay, we have got a job, what do we care whether anyone lives or dies. This is their way of thinking.... they know very well that their job is secure and they have no concern about money
> (FGD, Married men-MM1)

A group of boys elaborated on the different ways in which people held public and private facilities accountable to them:

> If you go in the private you have to pay, so you want to get really good treatment. In sarkari, even if the doctor provides superficial care, one doesn't say anything... (one says) its all fine yaar, whatever happened was okay, now let's go.
> (FGD, Adolescent boys -AB2)

4.2. The 'good' doctor: rural communities on provider quality

> If someone has benefited from a particular doctor... .assume that I have visited a doctor and it has helped me, so I say to the villagers that this man is a good doctor and the word spreads. So then you too will go to him, and you will and you will too...
> (FGD married men -MM1)

By all accounts, word of mouth publicity within the community helped people make decisions about which providers to approach, for all types of illnesses including reproductive morbidities. In times of need people also proactively solicited the opinions of others in the community network, about which provider to approach.

People tacitly evaluated providers based on their personal encounters, often more than one, and this information was passed on to other community members. The terms used to refer to providers who were rated high were *achcha* or *sahi* ['good', 'fine' or 'alright']. Judgments about whether a doctor was good or not were based on two observable

criteria: the competence of the doctor in providing *ilaj* [treatment] or *dava* [medicine] perceived as 'correct' and effective, and his 'good' behaviour.

> R: The *gun* [qualities] are about his education, his work, his knowledge ... But we do not have a measure for that... .so we cannot measure that. The only one measure is what he does... the work he does... if his treatment is okay and if he suits us... ..then we consider him competent.
> R: Another aspect of a good doctor is his conduct and good behavior... that also works. Half the treatment is done by his behavior only. This should also be there... the identity of a good doctor should also be this... that good behaviour is an identity.
> (FGD married men-MM1)

Quality was not seen merely as a property or a characteristic of providers which could be good or bad. Rather it was a judgment or an evaluation made by people based primarily on observable indicators of two important quality domains: technical and interpersonal. Quality was thus an evaluated attribute of 'good' providers. People weighed the two domains of quality, technical and interpersonal, against each other and usually described both as complementary. This balance however was not always maintained, especially when people made spontaneous references to a 'good' doctor. These references were often seen to carry strong undertones of perceived technical competence more than interpersonal skills. In fact, some of the men were careful not to overemphasize the significance of provider's good behavior relative to the effectiveness of his treatment.

Technical quality

A provider's technical competence lay mainly in the perceived effectiveness of his treatment. People acknowledged individual differences in perception of the efficacy of providers' medicine. They saw that different providers' medicines suited different people differently and once belief in a particular provider's medicine was established, people were likely to visit that provider over and over again, also taking other family members with them for treatment.

At the same time, people also spontaneously made distinctions between effective medicine and strong or unnecessary medicine. In several FGDs participants expressed negative views about strong and fast acting medicines, and treatment perceived as unnecessary. Examples included injections and 'drips' perceived as unnecessary, and a provider who practiced in this way was said 'not to know anything'. However it was not very clear how and why some medicines and treatment were perceived as inappropriate.

Although perceived efficacy of medicine was highly prioritized, people also recognized and expressed other observable indicators of a doctor's technical competence:

> He does a good check up. Sees the pulse, blood pressure, temperature
> Has good facilities for ultra-sound, X-ray and lab. So no time is wasted (about a doctor in Dehradun)
> (FGD Adolescent girls- AG1)

> She gives good advice also... like if we have an illness... you had this illness because you ate this and this... .you should not eat these things
> (FGD Adolescent girls- AG2)

For genito-urinary complaints, men and boys, and women and girls to a lesser extent, expressed a preference for better educated doctors as these were perceived as more knowledgeable. Nevertheless they still usually relied on their local providers for initial guidance and referral information. By and large there was consensus that illnesses related to the genital organs required better educated, 'specialist' providers. However, many different interpretations of these specialist providers emerged:

A lady doctor because she is a women's specialist. (AG1)
One who is known in the entire region that he is a doctor for this illness (MM1)
First is degree (MM1)
To Ayurvedic doctors... one should show here (MW3)
Who has it written on the board (AB2)

Men and women interviewed in the household survey were asked what skills they would like to see in a 'good' provider for reproductive tract morbidities. People's preferences (presented in Table 4.1.) ranged from observable skills like 'does a thorough history taking' to those that were not so directly observable, such as 'has good technical knowledge'. Although the study did not explore the preferences further, it was clear that people used a variety of criteria to judge providers and that these criteria relied heavily on individual perceptions and interpretations of observed provider skills and behaviours.

Table4.1. Household survey respondents' preferences related to providers' technical skills

Technical skill preferences	Frequency
Does a thorough history taking and examination	41
Gives good and effective medicine	34
Explains about the treatment and disease	16
Medicine is cheap, also gives credit	16
Has good technical knowledge	13
Available when needed	6
Gives good advice	5
Correct diagnosis	3

Interpersonal quality

As people talked about a provider's good behavior, they expressed a range of interpersonal communication skills perceived as constituting good behaviour. As they provided these descriptions, many people had their local providers in mind. Some of these skills were observable and others were instinctive. Women's and girls' accounts suggested the significance of the presence of a close bonding and continuity of relationships between the community and its local providers ('we have family type

relations with him'). They also talked about other aspects of a provider's interpersonal communication skills which they had observed and appreciated in their providers:

> He talks in Garhwali, in our language and explains the medicine properly.... ..
> listens carefully about the illness.
> (FGD, married women-MW1)

> She solves problems very well... talks openly, and does a check up well.
> (FGD, Adolescent girls-AG2)

Another indicator of a provider's 'goodness' was his willingness to provide medicine on credit if a patient did not have ready cash, or to charge less, or nothing at all, from poor patients. People talked respectfully about such providers and they were perceived as altruistic and sympathetic to the poor.

Additionally, for complaints of a personal and private nature such as genito-urinary complaints, providers' attitude and the confidentiality that he provided were important skills. Both men and women expressed a strong preference for providers who did not 'leak any confidential information' and who 'did not make fun' of patients. They preferred providers who were non-judgmental and also open and frank about discussing problems of intimate body parts. An adolescent girl explained that a provider who was not shy would help them overcome their own shyness and talk freely about their problem.

Responses of men and women in the household survey (presented in Table 4.2.) reiterated many of the preferences expressed in the FGDs and underscored the importance of providers' interpersonal skills in people's views.

Table 4.2. Household survey respondents' preferences related to providers' interpersonal skills

Interpersonal skill preferences	Frequency
Talks respectfully	56
Talks in the local language	56
Friendly, understanding and kind	46
Provides confidentiality and privacy	42
Honest and of a good character	32
Listens attentively	20
Has an attitude of openness and frankness, is not shy	12
Provides reassurance	6

Finally, it was noted that discussions related to good behaviour were not without their share of skepticism:

> The private doctor who is well behaved is doing so for his money. He also thinks that if I don't maintain good relations with these people, how will I get the money that I want?
> (FGD, Married men-MM1)

4.3. Quality vs other issues

Most importantly, the FGDs revealed that people constantly weighed 'perceived' quality against the overall costs of treatment. Cost was undoubtedly the crucial and overriding factor in making provider related decisions. To summarize, people looked for medicine that was cheap, effective and available nearby. Though the more distant providers were regarded as more knowledgeable and better equipped, the overall costs of travel, of a possible overnight stay and of having to undergo expensive tests, acted as strong deterrents to traveling a long distance in the first instance itself.

Thus, for all types of illnesses, people first preferred to exhaust their nearby provider options. Amongst these local options, those providers were approached who gave them medicine that was seen as effective, cheap and on credit if need be.

In addition, women expressed a pronounced preference for going to female providers for any illness, wherever these were available. Especially for a genital problem, they preferred to approach a female provider as they could describe their problems to her without feeling any shyness or inhibitions.

4.4. Summary of the findings

People perceived and categorized providers in many different ways. In general the local nearby providers were perceived as less knowledgeable but useful for treating minor illnesses and indispensable for providing first aid and emergency care. People also spoke with greater familiarity and faith in private providers, whether near or far. Quality was perceived as an attribute of good providers and people based their judgments on arbitrary but observable indicators of quality: mainly technical and behavioural. These evaluations were not limited to s single encounter but made over time and over several encounters, and often shared with others in the community. To approach a provider for genital illnesses, his open and non-judgmental attitude and his confidentiality were perceived as especially important.

Chapter 5

EVALUATED QUALITY

'The best thing about this provider is that whenever you pay him for the medicine, he will always ask: do you have enough money for your fare back home or not?'

(-exit interview, male care seeker)

This chapter presents the findings on providers' evaluated quality of care. These evaluations were based on observations of 60 providers and their interactions with 367 patients: 168 male and 199 female. Providers sought initial consent from 372 patients who had come to the clinics to seek care for their genito-urinary symptoms. These represented around 25% of approximately 1500 patients (27% of whom were children below the age of 11) who had sought treatment from the study providers for a variety of health reasons, during the study period. Out of the 372 patients, 3 male (approximately in their mid-thirties, according to the providers) and 2 female patients (in mid-twenties) declined to participate, so a total of 367 patients were observed. Two men and 2 women later refused to provide their specimens for laboratory investigations. Thus the analysis that required patients' laboratory data (in Chapter 6) was restricted to 166 men and 197 women (total 363), but in this chapter on providers' quality, the entire dataset of 367 patients was used. Researchers spent 7-10 days, on average, at each provider clinic in order to recruit the required number of patients. Finally, the full set of at least 6 observations could be completed at 48 provider clinics. Five patients each could be recruited at another 6 clinics, 4 patients each at another 5 clinics and only 2 patients could be recruited at 1 provider clinic even after waiting for 12 days. In general, there were fewer male than female care seekers (with genito-urinary symptoms) who approached these provider clinics and so it often took longer to recruit male than female patients.

From a total of 127 providers surveyed in the 6 study blocks, 7 providers with a recognized qualification practiced in the more urban areas of one of the study blocks, very close to the big towns of Rishikesh and Dehradun. As the study focus was on rural areas, these providers were excluded from the final sample. Another 6 providers said they did not see usually receive patients with genito-urinary symptoms, but very occasionally saw patients with burning micturition. They said that people approached them mainly for fevers and respiratory problems. These 6 providers were also excluded from the final sample. Of the remaining 114 providers, 70 were selected for inclusion in final list, based on their reported genito-urinary patient load of more than 10 patients in the last month. This list of 70 providers included an extra 10 providers to allow for possible dropouts as the research began. All 70 had consented to participate in the research. However, once the study began, 10 providers were not available at their clinics while the study team was in their area. Reasons inlcuded a change of profession (4 providers), need to travel to another town for personal or work related reasons (5 providers) and being unwell (1 provider). Due to immense logistical problems associated with traveling long distances to provider clinics, providers who were not available while the team was camping in that area to observe other providers of the same area, and who did not respond to messages left at their clinic to reschedule another time, were dropped from the study. Thus the final sample included 60 providers. Luckily for the study, not more than 10 providers dropped out and the required sample size of 60 was achieved.

It should also be mentioned that gaining consent from providers posed no challenges in the study areas. All providers, except one, consented to participate willingly and enthusiastically. This could be attributed to their previous familiarity with GCDWS, the local NGO that administered the project. The one provider who objected was a qualified provider and his main objection was that he did not want to be observed by a non-medical observer. However the team did manage to recruit a qualified doctor on its rolls and the provider finally agreed to participate in the research.

Quality was evaluated with respect to its structure, process and outcome. This framework, proposed by Donabedian, has been described in detail in the Methods

chapter. The structural aspects of quality included providers' educational background and qualifications, providers' knowledge, providers' treatment charges and locational and physical aspects of facilities. Evaluations of the quality process included detailed observations of providers' technical and interpersonal quality. Syndromic management criteria were used to assess providers' technical quality and lay criteria (people's views and preferences) were used to assess providers' interpersonal quality. The outcome of the quality process was studied in terms of patients' views at the conclusion of their interaction with the provider. The chapter also includes an analysis of provider and patient characteristics that were found to be closely associated with providers' technical and interpersonal quality.

5.1. Structural elements of quality

An overview of the structural aspects of providers' services is presented in Table 5.1.

5.1.1. Providers' background

In the sample of 60 providers, only 7 had been formally trained in an indigenous system of medicine and possessed an officially recognized ISM qualification. These included graduate degrees in Ayurvedic (BAMS), Homeopathic (BHMS) and Unani (BUMS) medicine. The remaining 53 possessed qualifications that had not been obtained from an officially recognized institution or courses. Common among these were certificates in 'electro-homeopathy' (BEMS and BEHMS) and in different types of courses in ayurveda (e.g. ayurved ratna, ayurved shiromani and ved visharad). Some providers called themselves RMPs (Registered Medical Practitioner) and 'Bangali' doctors. Several other types of abbreviated degrees and diplomas were also found such as BIMS, BHAMS, IAMS, ICHMS, HLMS etc. None of these were officially recognized degrees and certificates (and researchers could not decipher many of the acronyms).

For the analysis, providers were frequently categorized into two groups based on their qualifications: recognized (R) and unrecognized (UR). Providers in India with a

recognized qualification in an indigenous system of medicine, typically study a University degree course in one of the systems including Ayurveda, Unani, Homeopathy and Siddha[159]. The unrecognized might have studied at unrecognized institutions or through correspondence courses of varying durations. There were only 7 recognized providers in this study sample; even so, any differences in their performance have been highlighted wherever appropriate, recognizing the fact that the two types of providers would have undergone different types of study and training. Nonetheless they were quite similar in many socio-demographic and practice characteristics. Nearly all the providers were male, a majority were below the age of 40 (R 57%%; UR 75%), 90 % had completed 12 years of schooling and more than 80 % had been practicing independently for more than 5 years. Sixty eight percent were natives of the same district. (Table 5.1.a)

5.1.2. Providers' knowledge

More than four fifths of the providers had some correct knowledge of prevention advice for STDs, and more than 90 % were aware of one or more harmful consequences of STDs. (Table 5.1.). However, only around one - third attributed an abnormal genital discharge to infections or unsafe sex. Knowledge of the most recently recommended drugs was also low. Only two providers could name one correct drug from NACO's revised recommended regimen[160] for urethral and vaginal discharge.

A closer look at providers' responses revealed that they attributed an abnormal genital discharge in men and women and lower abdominal pain in women to a range of other causes besides the strictly biomedical ones. Table 5.1.b. presents the full range of the explanations given by providers. These were predominantly of a socio-cultural nature, including consumption of hot and spicy foods and consumption of liquor (26 responses in total), lack of personal bodily hygiene (14 responses total), hard work (12 responses total), weakness and malnutrition (12 responses total). Discharge was also attributed to semen related etiology in men such as dhat, masturbation or lack of semen (6 responses) . In women, discharge was additionally attributed to menstrual problems and related blood loss (9 responses) and to complications of childbirth and post partum care (5

responses). Four providers even attributed vaginal dischare to mental tension and worries. There was also a special category of responses related to swelling of various body parts, such as the intestines, the uterus, the tests, the ovary and the urethra (18 responses). Providers frequently gave this response for lower abdominal pain in particular (12 responses). Interestingly, providers typically gave more than one response each and even those who stated 'infections' as a reason, often combined it with one or more non-biomedical reason.

5.1.3. Providers' facilities

Only 2 provider clinics were found to be located in village interiors; the rest were all strategically located in bazaar type of areas or on roadsides where they could be easily accessed by people from several surrounding villages (see Table 5.1.). Patients of 70 % providers had traveled a mean distance of 5 kms or less to reach the clinic. The majority of clinics were open for 8 hours or more daily, more so for the unrecognized providers' (91%) than the recognized (57%; $p<0.05$). Almost all clinics had provisions for examining patients in private and were equipped with examining tables or other horizontal surfaces. Similar privacy for a consultation with the provider was available at 100 % of the recognized and 70 % of the unrecognized provider clinics, altogether 73%. A speculum was present at 3 provider clinics; all were recognized providers. More than 85 % of both types of providers stocked condoms. Barring 1 recognized and 3 unrecognized providers, all the rest stocked allopathic drugs.

5.1.4. Provider charges

Roughly two-thirds of the providers charged their patients an average amount of Rs. 51-100 ($1-2) and around a fourth of the providers even charged more than Rs.100. Charges appeared similar for recognized and unrecognized providers. However, a significantly larger proportion ($p<0.02$) of unrecognized providers (74%) were seen to provide treatment on credit to some of their patients as compared to a smaller proportion of the recognized providers (29%).

Table 5.1.a. An overview of providers' quality of care: structural aspects

Structural elements of quality		Providers N=60 No. (%)
BACKGROUND		
	Male	59 (98%)
	Female	1 (2%)
Age	< 30 years	17 (28%)
	31-40 years	27 (45%)
	> 40 years	16 (27%)
	Completed 12 years of schooling	54 (90%)
Years of independent practice	< 5 years	12 (20%)
	5.1-10 years	24 (40%)
	> 10 years	24 (40%)
	Ever attached with a qualified biomedical doctor	34 (57%)
	Native of the same district	41 (68%)
KNOWLEDGE		
Attributed abnormal urethral discharge in men to (a) Gonorrhea &/or Chlamydia, &/or (b) infection due to unsafe sex		20 (33%)
Attributed abnormal vaginal discharge to infection due to unsafe sex or a spontaneous infection		19 (32%)
Attributed genital ulcers to (a) syphilis/chancroid/herpes, &/or (b) a bacteria or virus, &/or (c)infection due to unsafe sex		30 (50%)
Named at least one correct drug for male urethral discharge, as recommended by syndromic guidelines in India		1(2%)
Named at least one correct drug for vaginal discharge, as recommended by syndromic guidelines in India		1(2%)
Mentioned one or more correct advice for clients on STD prevention (a) abstain until cured (b)treat partner (c) have one regular partner (d) use condoms		53 (88%)
Mentioned one or more harmful consequences of STDs in women: (a) chronic pain of the power abdomen (b) ectopic pregnancy (c) death (d) infertility (e) acquire HIV/AIDs (f) still birth (g) sick baby (h) blind baby		55 (92%)
Mentioned 6 or more (the mid value) correct responses		20 (33%)
ACCESSIBILITY AND PHYSICAL ENVIRONMENT OF FACILITY		
Open for 8 hours or more daily		52 (87%)
Located near a market place or a main road		58 (97%)
Patients traveled a mean distance of 5 kms or less to reach clinic		42 (70%)
Separate room or enclosure for examining in privacy		59 (98%)
Separate room or enclosure for consultation in privacy		44 (73%)
Equipped with examination table		60(100%)
Presence of a speculum		3 (5%)
Presence of gloves		46 (77%)
Stocked condoms		53 (88%)
Presence of an autoclave/stove/boiler for sterilizing		40 (67%)
Stocked & dispensed allopathic drugs		56 (93%)
Stocked & dispensed indigenous drugs		53 (88%)

Structural elements of quality	Providers N=60 No. (%)
CHARGES FOR TREATMENT (Average per patient)	
Up to Rs. 50 ($ 1)	6 (10%)
Rs. 51-100 ($ 1.1-2)	38 (63%)
Rs. 101-310 ($ 2.1-3)	16 (27%)
Provided credit to some patients	41(68%)

Table 5.1.b. Variety of reasons attributed by providers for 3 classical symptoms of reproductive tract morbidities (responses are not mutually exclusive as most providers gave more than a single response each)

Causes of abnormal urethral discharge in men (frequency of responses)	Causes of abnormal vaginal discharge in women (frequency of responses)	Causes of lower abdominal pain in women, possibly with fever (frequency of responses)
Hot and spicy foods / irregular eating habits / eating meat and eggs / liquor intake / gastritis / constipation **(13)**	Infection (not specified) / infection in the uterus / infection in the vagina / fungal infection / **(14)**	UTI / kidney infection / 'stone'/ appendicitis **(15)**
Infection/bacterial infection / viral infection **(12)**	Body heat / eating hot and spicy foods / gastritis / constipation **(13)**	Swelling in the uterus or ovary / swelling in the intestine **(12)**
Dhat / masturbation / lack of semen **(6)**	Lack of personal hygiene and cleanliness **(12)**	Infection in the uterus **(9)**
Heat in the body **(6)**	Hard physical work **(10)**	Body heat / eating hot & spicy foods / gastritis / malnutrition / dehydration **(8)**
Multiple sexual partners **(5)**	Weakness / malnutrition **(9)**	Irregular menstruation **(7)**
An STD / a sexually transmitted infection/an infection of the reproductive organs **(4)**	Anaemia / loss of blood / irregular menstrual cycle **(9)**	Infection / bacterial infection **(6)**
A UTI / kidney infection / 'stone' **(4)**	Leucorrhea or white discharge **(6)**	'PID' **(5)**
Swelling in the urethra / in the testes / in the intestines **(4)**	Unsafe sex / sex with multiple partners / sex with an infected partner **(5)**	White discharge / leucorrhea **(5)**
Unsafe sex or infection due to unsafe sex **(3)**	Early marriage / frequent childbirths / delivery complications / unhygienic delivery / lack of post partum care **(5)**	Cancer / tumour **(4)**
Weakness **(3)**	Tension and worries **(4)**	Will know after a test /ultrasound **(3)**
Hard physical work **(2)**	Ulcer / tumour **(2)**	Multiple sexual partners / an STD **(2)**
Lack of personal hygiene and cleanliness **(2)**	Swelling in the uterus /PID **(3)**	Lack of personal hygiene **(1)**
Diabetes / heredity **(2)**	UTI **(1)**	

5.2. The Process Of Quality

Patient provider interactions were observed to evaluate providers' technical and interpersonal quality. Table 5.2. provides a comprehensive overview of providers' technical skills and the drugs they dispensed. Table 5.4.presents providers' interpersonal skills.

5.2.1 Technical quality

Median duration of the patient-provider interactions was 15 minutes. Of all procedures observed, 'asking questions related to the nature, severity and duration of the problem' was one that was performed most consistently by all providers (Table 5.2.). The remaining five procedures were inadequately performed in one of two ways: providers either did not perform the procedure at all or performed it inconsistently with less than half the patients observed. Among these procedures, the ones performed more included partner treatment (68 % providers), counseling for condom use (45 % providers) and counseling for disease prevention (43 % providers). Less performed procedures included genital examination (20 %) and behavioral risk assessment (18 %). On disaggregating the data it was found that significantly more of the recognized providers than the unrecognized, counseled for disease prevention (86 % R as against 38 % UR; $p<0.05$) and performed a genital examination (43 % R as against 17 % UR; $p<0.05$). Further, although statistically similar proportions of both providers counseled for condoms (57 % R and 43 % UR) and attempted partner treatment (71 % R and 68 % UR), more of the recognized performed both procedures more consistently with more than 50 % of their patients. The least number of procedures performed was 0.75 and the maximum number was 4, with a median of 1.5 (see Table 5.3). Recognized providers displayed a significantly higher median of 2.4 as compared to the unrecognized. Among the recognized providers, 3 providers who had a speculum available in the clinic (and had used it) demonstrated an even higher median of 3.75 (see Table 5.6)

Drugs dispensed

One recognized provider and 3 unrecognized providers gave a correct drug in the right dosage, as currently recommended by NACO's RTI/STI management regimen (Table 5.2.). This drug was metronidazole, of strength 400mg, twice a day for 7 days.

Eighty three percent providers dispensed antibiotics and 42% dispensed at least one antibiotic per patient. Antibiotics commonly given were ciprofloxacin and norflox. These are no longer the recommended drugs for NG and CT in India due to increasing evidence of ciprofloxacin resistance in India[161] and other parts of Southeast Asia[162]. Other, less frequently given antibiotics included doxycycline, tetracycline, penicillin, amoxicillin, septron, ofloxacin and gentamycin.

Sixty percent providers dispensed up to three drugs on average per patient and the majority (73 %) dispensed a blend of biomedical and indigenous formulations. Indigenous drugs given included those from the modern Ayurvedic and homeopathy pharmacopia, such as ashokarist, hempushpa and M2Tone. These are particularly recommended for women with reproductive health problems.

Table 5.2 : Providers' technical quality

SYNDROMIC MANAGEMENT PROCEDURES PERFORMED	Total N=60 No. (%)
Asked questions about the problem	
Performed at all	60 (100%)
Performed with > 50% patients	60 (100%)
Behavioral risk assessment	
Performed at all	11 (18%)
Performed with > 50% patients	0 (0%)
Genital examination	
Performed at all	12 (20%)
Performed with > 50% patients	1 (2%)
Counseling for disease prevention	
Performed at all	26 (43%)
Performed with > 50% patients	3 (5%)
Counseling for condoms	
Performed at all	27 (45%)
Performed with > 50% patients	6 (10%)
Attempted partner treatment and/or notification	
Performed at all	41 (68%)
Performed with > 50% patients	9 (15%)
DRUGS DISPENSED	
Dispensed at least one correct drug in correct dosage to at least one patient	4 (7%)
Antibiotics dispensed	
None	10 (17%)
At least one antibiotic per patient	25 (42%)
Number of drugs dispensed per patient	
1-3 drugs	36 (60%)
>3 drugs	24 (40%)
Types of drugs dispensed	
Only indigenous	3 (5%)
Only biomedical	13 (22%)
Indigenous and biomedical	44 (73%)

Table 5.3. Median, minimum and maximum number of syndromic procedures performed (out of 6) by providers

Median of procedures performed	Minimum procedures performed	Maximum number of procedures performed
1.5	0.75	4

5.2.2. Providers interpersonal skills

In general, providers demonstrated moderate to high levels of interpersonal skills. All providers demonstrated higher levels of 'non-judgmental attitude' (100 % providers), language use (62 % providers) and 'openness' (50 % providers) as compared to the other skills. Please see Table 5.4. Although no significant differences were observed between recognized and unrecognized providers, a greater proportion of the unrecognized demonstrated higher levels of 'friendliness' (30 % UR, 14 % R) and appropriate 'language use' (62 % UR, 57 % R). In contrast, a larger proportion of the recognized providers demonstrated higher levels of attentiveness (71 % R, 43 % UR), openness (71 % R, 47 % UR), privacy (57 % R, 36 % UR), and reassurance (43 % R, 21 % UR). The overall median was 1.20 with a minimum of 1.04 and a maximum of 1.68 (Table 5.5). For all interpersonal skills combined together, more of the recognized providers (71 %) demonstrated higher skill levels as compared to the unrecognized (49 %) but these were not statistically significant differences according to Fishers test of association.

Table 5.4. Interpersonal quality of providers by recognized/unrecognized qualifications

INTERPERSONAL SKILLS	Providers with a professional qualification[10] in an indigenous system of medicine N=7 No. (%)	Providers with an unrecognized/informal qualification** N=53 No. (%)	Total N=60 No. (%)
Friendliness			
Moderate	6 (86%)	37 (70%)	43 (72%)
High	1 (14%)	16 (30%)	17 (28%)
Respectful behavior			
Moderate	5 (71%)	39 (74%)	44 (73%)
High	2 (19%)	14 (26%)	16 (27%)
Attentiveness			
Moderate	2 (29%)	30 (57%)	32 (53%)
High	5 (71%)	23 (43%)	28 (47%)
Attitude of openness			
Moderate	2 (29%)	28 (53%)	30 (50%)
High	5 (71%)	25 (47%)	30 (50%)
Provision of privacy			
Moderate	3 (43%)	34 (64%)	37 (62%)
High	4 (57%)	19 (36%)	23 (38%)
Non-judgemental attitude			
Moderate	0 (0%)	0 (0%)	0 (0%)
High	7 (100%)	53 (100%)	60 (100%)
Language use			
Moderate	3 (43%)	20 (38%)	23 (38%)
High	4 (57%)	33 (62%)	37 (62%)
Provision of reassurance			
Moderate	4 (57%)	42 (79%)	44 (73%)
High	3 (43%)	11 (21%)	14 (23%)
Cumulative interpersonal			
Moderate	2 (29%)	27 (51%)	29 (48%)
High	5 (71%)	26 (49%)	31 (52%)

Table 5.5. Median of providers' interpersonal skills

Median	Minimum	Maximum
1.20	1.04	1.68

[10] BAMS, BUMS, BHMS

5.2.3. Provider characteristics associated with technical and interpersonal skills

Selected provider characteristics were examined for their effect on providers' technical quality and interpersonal quality. The outcome variable for technical quality was the antilog of the numerical variable's values. Outcome variable for interpersonal quality was also the antilog of the values for the numerical variable of interpersonal skills. Median values as well as geometric means were calculated for the two outcome variables in relation to each category of the explanatory variables. Potential explanatory variables were chosen based on the literature review (see the Methods Chapter, sub-section2.9.2.- Analysis of Quantitative Data) and included providers' age, qualification, attachment with a qualified biomedical doctor, years of experience, knowledge, charges, availability of privacy of consultation in the clinic and availability of equipment including speculum and condoms. The analysis was initially planned using multivariate logistic regression, but the small sample size of providers (only 7 recognized providers) resulted in extremely wide confidence intervals. The multivariate logistic model was therefore dropped and linear regression was used to test for associations between the outcome and explanatory variables.

Results are presented in Table 5.6. Providers' technical quality was strongly associated with their qualifications (overall p-value <0.003) and with the presence of a speculum in the clinic (overall $p<0.001$). Thus, providers with a recognized qualification were observed to perform a greater number of procedures (median 2.4) as compared with the unrecognized and among the recognized providers, three providers who possessed a speculum (and used it) demonstrated the highest median number of skills at 3.75. 2 of the 3 providers who had a speculum performed an examination with half or more of their patients and this is likely to have contributed to their greater number of technical skills.

Providers's knowledge did not show a significant overall association with technical quality (overall p value <0.125). However, an increase in the median number of skills was observed as providers' knowledge scores increased from a low of 3-4 to a mid level of 5-6 ($p<0.047$). No further increase in skills was observed with increasing knowledge scores

to 7-8. A look at the knowledge levels of providers with recognized/unrecognized qualifications did not reveal any significant differences in attainment of the higher scores (7-8) between the two groups. Thirty two percent of unrecognized providers and 43 of recognized providers obtained high scores on the knowledge assessment.

Providers' interpersonal quality was strongly associated with increasing treatment charges (overall $p<0.024$), and with the availability of a speculum ($p<0.001$) and condoms ($p<0.038$) in the clinic. Providers who charged more than Rs. 100 had a higher median value of interpersonal skills (1.22) as compared with providers who charged from Rs. 51-100 (median – 1.18). Providers who charged the least (less than or equal to Rs. 50) had the lowest interpersonal skills (median 1.12). Among those providers who stocked condoms, 47 % discussed condom use with varying numbers of their patients, and this may have added to their interpersonal skills through a display of greater non-judgemental attitude, client privacy and attitude of openness.

Attachment with a qualified biomedical doctor showed no significant association with either technical or interpersonal quality. Neither did age or years of practice, but technical quality appeared to increase with years of practice (although not statistically) from a median of 1.37 at 5 years or less to a similar level of 1.33 at 5.1-10 years and up to 1.58 at more than 10 years of practice.

Table 5.6. Provider related variables associated* with technical and interpersonal quality

Provider variables	Median technical procedures performed	Geometric mean	P-value of association	Median interpersonal skills	Geometric mean	P-value of association
Age			Overall: 0.42			Overall: 0.28
<30 years (N=17)	1.25	1.38		1.22	1.23	
31-40 years (N=27)	1.50	1.56	0.27	1.22	1.24	0.75
>40 years (N=16)	1.50	1.60	0.23	1.14	1.18	0.26
Qualification			Overall: <0.003			Overall: <0.068
Unrecognized (N=53)	1.50	1.44		1.20	1.21	
Recognized (N=7)	**2.40**	**2.18**	**<0.004**	1.35	1.31	0.06
Attachment with a qualified biomedical doctor			Overall: 0.57			Overall: 0.55
No (N=26)	1.41	1.47		1.19	1.21	
Yes (N=34)	1.50	1.55	0.57	1.20	1.23	0.55
Years of experience			Overall: 0.21			Overall: 0.49
Upto 5 yrs (N=12)	1.37	1.41		1.20	1.22	
5.1 – 10 yrs (N=24)	1.33	1.42	0.95	1.22	1.24	0.60
>10 yrs (N=24)	1.58	1.67	0.18	1.18	1.20	0.65
Knowledge (no. of correct responses out of 11 max)			Overall: 0.125			Overall: 0.33
3-4 correct (N=13)	1.22	1.30		1.20	1.23	
5-6 correct (N=27)	**1.50**	**1.66**	**0.04**	1.14	1.20	0.48
7-8 correct (N=20)	1.50	1.47	0.32	1.23	1.25	0.57
Charges			Overall: 0.46			Overall: **0.024**
Up to Rs 50 (N=6)	1.15	1.28		1.12	1.13	
Rs 51-100 (N=38)	1.41	1.53	0.26	1.18	1.21	0.101
> Rs 100 (N=16)	1.50	1.58	0.22	1.22	1.28	**0.009**
Availability of privacy for consultation			Overall: 0.21			Overall: 0.06
No N=16	1.29	1.38		1.18	1.18	
Yes N=44	1.50	1.57	0.21	1.22	1.24	0.06

Provider variables		Median technical procedures performed	Geometric mean	P-value of association	Median interpersonal skills	Geometric mean	P-value of association
Availability of speculum in the clinic				Overall: **<0.001**			Overall: **<0.001**
No	N= 57	1.50	1.45		1.20	1.21	
Yes	N= 3	**3.75**	**3.30**	**<0.001**	**1.40**	**1.48**	**<0.001**
Availability of condoms in the clinic				Overall: 0.13			Overall: **0.03**
No	N= 7	1.16	1.25		1.12	1.13	
Yes	N=53	1.50	1.55	0.13	**1.20**	**1.23**	**0.03**

*Note: The table shows median values and geometric means (of antilog values) for technical and interpersonal skills as distributions for both were slightly skewed and arithmetic means would not have provided an accurate measure of central values. Linear regression was used to analyse the associations between the numerical outcome variables (using their antilogs) and the categorical dependent variables. The strength of the associations is provided in the column with the p-values. P-values are for both the overall association as well as for the different categories of the independent variables against the reference base category. Significant associations are shown in bold.

5.2.4. Patient characteristics associated with technical and interpersonal quality

Providers' technical and interpersonal quality were also examined against selected patient characteristics, using multiple logistic regression and adjusting for the non-independence of individual patients seen by each provider, using robust standard errors. The dataset of 367 patients was used for this analysis.

Explanatory variables related to patient characteristics included patients' gender, age education, marital status, approximate monthly income, and occupation.

Patients' gender

Providers' quality, both technical and interpersonal, was found to be most strongly associated with patients' gender rather than with any other patient characteristics. Table

5.7. presents the associations between patients gender and technical quality and Table 5.8. presents the associations between patients gender and interpersonal quality.

With respect to individual technical procedures, providers were significantly less likely to counsel women than men on disease prevention (OR: 0.34, p<0.04) and on use of condoms (OR: 0.18, p<0.001) but significantly more than twice as likely to attempt partner treatment with women than men (OR: 2.15, p<0.001). The odds ratios of providers performing the other procedures -'asking questions', risk assessment, and genital examination'- were also less for women than men, although not at statistical levels of significance. Overall, providers were significantly less likely to perform more than 2 technical procedures with women as compared to men (OR: 0.34, p=0.01).

Table 5.7. Variations in providers' technical performance by patients' gender (Odds ratios with standard errors adjusted for clustering around providers)

	Asked questions about the problem	Asked questions related to risk assessment	Performed a genital examination	Counseled on disease prevention	Counseled on condom use	Counseled on partner treatment	Performed more than any 2 procedures
P-value	P=0.67	P=0.12	P=0.29	P<0.04	P<0.001	P<0.001	P<0.01
M	1	1	1	1	1	1	1
F	.58	.26	.40	.34	.18	2.15	.34
95%CI	(.05 - 6.7)	(.05 - 1.4)	(.07 - 2.2)	(.1 - .9)	(.07 - .4)	(1.2 - 3.7)	(.1-.8)

Table 5.8.Variations in providers' interpersonal skills by patients' gender (Odds ratios with standard errors adjusted for clustering around providers)

	Friendli-ness	Respectful behaviour	Attentiven ess	Attitude of openness	Provision of privacy	Non-judgmenta l attitude	Use of appropriate language	Provision of reassuran ce	Overall interper sonal skills
P value	P<0.05	P=0.15	P<0.04	P=0.97	P=0.43	P=0.59	P<0.001	P=0.38	P=0.38
M	1	1	1	1	1	1	1	1	1
F	2.08	2.11	1.93	1.00	.79	.80	5.16	.69	1.2
95%CI	(1.0 – 4.3)	(.7 – 5.9)	(1.0 – 3.6)	(.5 – 1.9)	(.4 – 1.4)	(.3 – 1.8)	(2.6 –10.0)	(.3 – 1.5)	(.7-1.8)

With respect to interpersonal quality, providers were around twice as likely to be friendlier and more attentive to women as compared to men (OR: 2.08, 95% CI 1.0-4.3

and OR: 1.93, 95% CI 1.0-3.6) and to use more appropriate local language with women (OR: 5.16, 95% CI 2.6-10.0).

Patients' marital status

Results also showed some interesting associations between selected elements of providers quality and patients', particularly male patients', marital status (Table 5.9.). Providers were significantly less non-judgmental with unmarried men (OR: 0.21, 95% CI .04-1.0) and more likely to conduct a behavioral risk assessment (OR: 5.78, 95% CI 1.5-21.3) with them. Similar associations were not observed for women.

Table 5.9. Associations between marital status of male patients and elements of providers' interpersonal and technical quality

	Non-judgmental attitude	Behavioral risk assessment
Men		
P-value	P<0.05	P<0.0001
Currently married 139 (83%)	1	1
Currently single* 29 (17%)	.21	5.78
95% CI	.04-1.0	1.5-21.3

* 28 were unmarried and one was widowed

5.3. Outcome

Patients' views at the conclusion of care seeking encounter

During the exit interview, patients were asked for their view of the interaction. They were asked to state any aspect of the entire health encounter at the clinic that had left them feeling positive and satisfied. Responses were analyzed qualitatively.

A large majority of patients were able to talk about positive aspects of the encounter. Responses tended to be focused on the provider's perceived attributes: his good behaviour, his technical competence, and his human qualities. Providers' proximity to home and the availability of medicines at the clinic were also seen as extremely positive

aspects. Respondents talked about their faith in the efficacy and suitability of the provider's medicines, his perceived thoroughness in obtaining a case history and of doing a good 'checkup'. They described various facets of the provider's human qualities:

> 'In-spite of being a doctor he speaks with great affection'
> 'Talks with a smile... never scolds... never gets angry'
> 'Although he is from outside, he feels like one from our own village and he treats everyone like his brother'
> 'The best thing about this provider is that whenever you pay him for the medicine, he will always ask: Do you have enough money for your fare back home or not?'

Such responses highlighted the enormous value that respondents attached to simple acts of provider kindness and understanding and his ability to establish a 'community kinship' with his patients. These acts were perhaps even more important than the provider's technical skills and indeed responses related to providers' interpersonal and human qualities far outweighed other types of responses.

Many responses reflected views that were not limited to a single encounter – the present one- but were clearly formed over a period of time, over numerous encounters with the same provider:

> 'Each time I come here, I get immediate relief from his medicine'.
> 'This doctor speaks in our language so that we can understand whatever he says to us. We like this thing very much'
> 'Doctor *saab* [person of a superior position] lives near our village. Whenever we need him, he is available... day or night.'

In this way the responses also provided evidence of a tacit and ongoing cycle of patients' expectations being fulfilled followed by more visits. For some patients this fulfillment lay in the reaffirmation of their preformed judgments and perceptions. For others it was a more specific expectation related to their illness and treatment that had been met:

> 'I am happy that doctor *saab* explained to me properly about my illness. He said that white discharge may occur due to heat also... so I am feeling reassured.'
> 'He explained to me very properly about what all (foods etc) to avoid... '

Not all respondents however were able to talk about a positive aspect of the encounter. Unlike the positive aspect which predominantly held a provider focus, the negative aspect often reflected the patient's own state of mind and lack of physical well being at that moment. Patients often expressed distress at their physical suffering and for many this was aggravated by their meager material circumstances. They said that in their stressful condition they were unable to think positively about anything ('If you are sick how can you think positively about anything?)

There were also those patients who were unable to think of any response at all, positive or negative. These patients attributed their inability to not knowing enough about the provider. They seemed to be covertly (and also in some cases, overtly) stating that they had not yet had a chance to form any expectations or judgments about the provider that the present encounter could have fulfilled and strengthened:

> 'This is the first time I have come to this doctor for treatment. How can I tell you what made me happy?'

Many of these patients wanted to reserve their judgment until they felt better and had some sense of the providers' efficacy of medicine. Such first time patients appeared to have come with the primary expectation of testing the providers' ability to cure, and were not as taken up with his interpersonal skills. Their satisfaction with the provider would depend upon whether or not his medicine met their expectations, i.e. brought them relief from their symptoms.

To summarize, patients' satisfaction was a complex process involving a myriad perceptions and expectations that patients came with to the clinic and the extent to which these were fulfilled in their own minds. Continuity of provider relationships played an

important role in patients' satisfaction. The process was also influenced by the patients own state of physical and mental distress at that time.

5.4. Summary of the findings

In the sample of 60 providers only 7 possessed a formal qualification in an indigenous system of medicine. There was 1 female provider, the others were all male, with a mean age of 37.5 years. A majority had completed 12 years of schooling and had been in practice for more than 5 years. Fifty one providers had been attached with other doctors as apprentices or as 'compounders' and had learned their skills on the job. Sixty eight percent providers were natives of the same district. A large majority of providers had some correct knowledge of prevention advice and of the harmful consequences of STDs, but few providers attributed an abnormal genital discharge to an infection or to unsafe sex and knowledge of the most recently recommended drugs for RTIs was missing. Providers commonly attributed the common symptoms of vaginal discharge, urethral discharge and lower abdominal pain to non-biomedical reasons. Even when an infection was mentioned, it was often in combination with the other socio-cultural reasons such as dietary factors, hard work or lack of personal hygiene. Provider clinics were conveniently located with suitable opening hours. Most stocked and dispensed allopathic drugs. Majority of the providers charged between Rs. 51-100 (approx. $1-2) on average and mean charges were Rs. 93.00. The price of drugs was included in the total charges.

The process of quality: Providers' technical quality was found to be inadequate in relation to the syndromic management procedures. They performed a median of 1.5 procedures out of six. Performance was inconsistent across the sex of the patients. Providers generally dispensed a blend of indigenous and biomedical drugs and a majority gave up to 3 drugs on average per patient. Only 4 providers gave one correct drug in the right dosage to one of their patients (Metronidazole 400mg, twice a day for 7 days). Interpersonal quality was better. More than half the providers (52%) demonstrated high levels of interpersonal skills, the highest being non-judgmental attitude and language use. However, as described in the next chapter, a majority of the patients were not suffering

from any diagnosable infections, and use of the syndromic guidelines with this population would have led to considerable overtreatment. Viewed in that light, against the aetiologies of the complaints, the fact that providers did not perform many of the syndromic procedures could perhaps not constitute as best evidence of their low technical skills. However the large proportion of antibiotic dispensing is what then stands out as a negative aspect of technical quality.

Determinants of quality: Providers' qualifications were significantly associated with technical quality ($p<0.003$) but not as significantly with interpersonal quality. Providers' knowledge, at middle levels of knowledge, was associated with technical quality ($p<0.04$) but this relationship did not show a similar increase with higher levels of knowledge. Qualified providers who had a speculum available in the clinic, demonstrated the highest number of technical skills (median 3.75). Providers' interpersonal quality was strongly associated with increasing treatment charges ($p< 0.02$) and with the availability of a speculum and condoms in the clinic. Patients' gender and marital status also influenced providers' quality. Providers were more likely to provide better technical quality to men and better interpersonal quality to women. They were twice as likely to be friendlier (OR 2.08, 95%CI 1.0-4.3) and more attentive (OR 1.93, 95%CI 1.0-3.6) with women than with men and five times more likely to demonstrate appropriate language use with women (OR 5.16, 95% CI 2.6-10.0). As for the technical procedures, providers were less likely to perform any of the technical procedures with women (OR for overall technical quality with women: 0.34, 95%CI .1-.8) except for discussing partner treatment (which they were twice more likely to do with women – OR 2.15, 95%CI 1.2-3.7). With respect to marital status, providers were less likely to be non-judgmental with unmarried men (OR 0.21, 95%CI .04-1.0) and more likely to conduct a behavioral risk assessment with them (OR 5.78, 95%CI 1.5-21.3).

Outcome (as in patients' perceptions): Patients talked about observable indicators of providers' quality that they had liked. While in the FGDs and the household survey interviews, the efficacy of provider's medicine had occupied a large conversational space, in these post interaction responses, people talked more about the provider's good

behavior and his human qualities. It was also clear that people, in referring to this encounter, were describing and reaffirming their views of the provider formed over numerous encounters, and in relation to attributes that were important to them. Thus people's quality assessments were not limited to this single encounter; satisfaction was reflected in a fulfillment of the patients' prior expectations, formed over a period of long and continuous relationships with their providers. Findings are discussed in detail in Chapter 7, particularly in sections 7.1 and 7.3.

Chapter 6

SYMPTOMS OF A REPRODUCTIVE TRACT INFECTION ? FINDINGS FROM THE SURVEY OF MEN AND WOMEN PRESENTING AT CLINICS OF RURAL PROVIDERS

> 'According to our information, there is no infectious disease over here. But still we will say that like there is dhat etc. which happens in males. Otherwise there is no disease over here.'
>
> (-FGD, married men, MM1)

This chapter presents the study's epidemiological findings. These are based on the laboratory investigations of patients' specimens (urine in men and vaginal swabs in women) and assessments of their psychological health using the GHQ-12. AS described in the previous chapter on Evaluated Quality, providers sought initial consent from 372 patients who had come to the clinics to seek care for their genito-urinary symptoms. These represented around 25% of approximately 1500 patients who had sought treatment from the study providers for a variety of health reasons, during the study period. Out of the 372 patients, 3 male (approximately in their mid-thirties, according to the providers) and 2 female patients (in mid-twenties) declined to participate, so a total of 367 patients were observed. Two men and 2 women later refused to provide their specimens for laboratory investigations. Thus the analysis that required patients' laboratory data in this Chapter was restricted to 166 men and 197 women (total 363). Symptoms, infections and GHQ caseness were first examined against patients' socio-demographic characteristics and then the associations between symptoms and infections and symptoms and GHQ caseness were analyzed.

A profile of all the 367 care seekers, 199 women and 168 men, is presented in Chapter 3: Health and care seeking in Tehri Garhwal, Table 3.2.

6.1. Symptoms reported by men and women

The majority of men (39 %) reported 3 symptoms, with a mean of 3.2 (Fig.6.1.a). The majority of women (51 %) reported 5 symptoms with a median of 5 (Fig.6.1.b.).

Fig. 6.1.a.

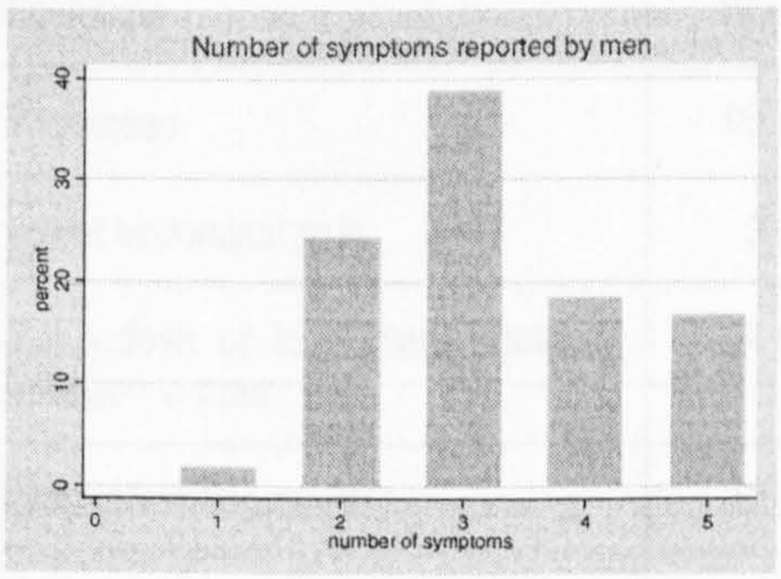


Fig. 6.1.b.

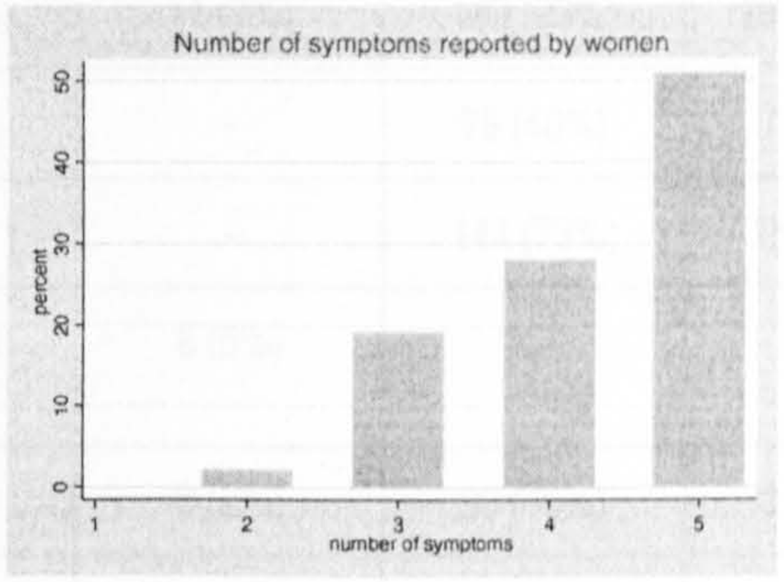


Table 6.1. provides an overview of the types of symptoms reported by men and women. Women most commonly reported an abnormal vaginal discharge (reported at all[11] by 98 % women) followed by backache (93 %) and lower abdominal pain(73 %). Men most commonly reported burning/painful micturition (reported at all by 86 % men), backache (66 %) and urethral discharge (60 %). Few reported genital ulcers (8 % men and 3 % women).

[11] Symptoms were distinguished between those reported 'at all' and those reported as 'presenting complaints' as the presenting complaints were those spontaneously mentioned at the outset by the patient, while those reported 'at all' also included those that may have been elicited later through the provider's probing.

Table 6. 1. Common symptoms reported by symptomatic male and female care seekers

Reported symptoms	Men n=168		Women n=197	
	Reported at all	Reported as presenting complaint	Reported at all	Reported as presenting complaint
Genital discharge	100 (60%)	82 (49%)	192 (98%)	133 (67%)
Burning micturition	143 (86%)	57 (34%)	146 (74%)	8 (4%)
Backache	109 (66%)	11 (7%)	183 (93%)	29 (15%)
Weakness	90 (54%)	-	78 (40%)	7 (3%)
Lower abdominal pain	3 (2%)	-	144 (73%)	15 (8%)
Swapndosh or involuntary nocturnal emission in men	34 (20%)	8 (5%)	NA	NA
Genital irritation or itch	37 (22%)	3 (2%)	90 (46%)	4 (2%)
Genital ulcers	14 (8%)	3 (2%)	5 (3%)	1 (1%)
Blood in urine	6 (4%)	2 (1%)	6 (3%)	-

Table 6.2 shows the socio-demographic characteristics of men who reported dhat and/or burning micturition and women who reported an abnormal vaginal discharge and/or lower abdominal pain. In general, these distributions were reflective of the overall profile of the care seekers (as shown in Chapter 3, Table 3.2) and no strong associations were seen (even when presenting complaints were examined against socio-demographic characteristics). The profile of respondents in Table 6.2 was also quite similar to the profile of household survey respondents shown in Chapter 3, Table 3.1, except for one striking apparent difference. A larger proportion of illiterate men (20%) were found at the clinics (Table 3.2, Chapter 3) and who reported dhat (22%) and burning micturition (19%) in Table 6.2, than we found in the household survey (Table 3.1, Chapter 3) where the proportion of illiterate men was only 7%.

Table 6.2. Socio-demographic characteristics of men and women reporting key symptoms

Characteristics	Men N=166		Women N=197	
	Reported dhat at all N=100	Reported burning/painful micturition at all N=143	Reported vaginal discharge at all N= 192	Reported LAP at all N=144
Age				
18-25 years (N=62)	38 (38%)	55 (38%)	68 (35%)	47 (33%)
26-35 years (N=73)	41 (41%)	62 (43%)	97 (51%)	78 (54%)
>35 years (N=31)	21 (21%)	26 (18%)	27 (14%)	19 (13%)
Education				
Literate (N=133)	78 (78%)	116 (81%)	46 (24%)	31 (22%)
Illiterate (N=33)	22 (22%)	27 (19%)	146 (76%)	113 (78%)
Marital status				
Married (N=138)	82 (82%)	120 (84%)	180 (94%)	134 (93%)
Unmarried (N=28)	18 (18%)	23 (16%)	12 (6%)	10 (7%)
Occupation				
Formal (N=44)	23 (23%)	37 (26%)	4 (2%)	3 (2%)
Informal (N=122)	77 (77%)	106 (74%)	188 (98%)	141 (98%)
Income				
≤ Rs. 1000 (N=56)	36 (36%)	48 (34%)	75 (39%)	56 (37%)
Rs. 1001-2000 (N=72)	42 (42%)	65 (45%)	64 (33%)	51 (35%)
> Rs. 2000 (N=38)	22 (22%)	30 (21%)	53 (28%)	37 (26%)

6.2. Prevalence of laboratory diagnosed infections

Table 6.3. shows the results of the laboratory diagnosis for the presence of any of the commonly occurring RTIs/STIs in the care seekers. Prevalence of infections was lowest for Gonorrhea and Chlamydia (in men 3 % CT and 2.4 % NG; in women 1 % CT and 3 % NG). It was relatively higher for TV and candida in women (6 % each) and highest for bacterial vaginosis in women (20 %).

Altogether 32.5 % women and 5.4 % men tested positive for an infection. 3 % women, and none of the men, had a concurrent infection with TV and BV being the ones that occurred together most commonly (Table 6.3).

Table 6.3. Prevalence of laboratory diagnosed infections in men and women

	Any STI			Any RTI		Total	Proportion with concurrent infections No. (%) (95% CI)
	Chlamydia Trachomatis No. (%) (95% CI)	Neisseria Gonorrhea No. (%) (95% CI)	Trichomonas Vaginalis No. (%) (95% CI)	Bacterial Vaginosis No. (%) (95% CI)	Candida Albicans No. (%) (95% CI)	No. (%) (95% CI)	
Women N=197	2 (1%) (0.6 - 3.6)	6 (3%) (1.1- 6.5)	12 (6%) (3 - 10)	39 (20%) (14 - 26)	11 (6%) (2.8 –9.7)	64(32.5%) (26– 39.5)	6 (3%)* (1.1-6.5)
Men N=166	5 (3%) (0.9 - 6.8)	4 (2.4%) (0.6 – 6)	-	-	-	9 (5.4%) (2 – 10)	none

* TV+BV (4); BV+NG (1); BV+ candida (1)

6.3. Association between symptoms and infections

Gonorrhea, Chlamydia and Trichomoniasis were the sexually transmitted infections included for detection in this study; bacterial vaginosis and candida were the endogenous RTIs. As the prevalence of infections, particularly of NG and CT was low, all infections were combined together, in spite of their different modes of transmission, to calculate positive predictive values[12] (PPV) of the key symptoms included in the syndromic management guidelines, for any RTI/STI (see Table 6.4). These values provided an estimate of the extent to which the key symptoms reported by this study sample, could predict the presence of an infection. Results showed symptoms to be weak predictors of an infection. PPVs of urethral discharge and/or burning micturition in men were extremely low for NG/CT (4 % to 6 %). They were relatively higher for vaginal discharge and lower abdominal pain in women for any RTI/STI (32 % and 29 %) but still not high enough to establish a strong association between these symptoms and the presence of a laboratory diagnosed infection in women.

[12] As the sample of care seekers was not representative of all the care seekers during the observation period, sensitivity and specificity were not calculated.

Table 6.4. Positive predictive values for a lab diagnosed RTI* of commonly occurring symptoms in men and women (symptoms selected for these calculations were those included in the syndromic guidelines)

Symptoms	PPV (no. infected/n)	95% Confidence interval
Dhat in men (n=100)	4% (4/100)	1%-10%
Burning/painful micturition in men (n=143)	6% (8/143)	2%-10%
Dhat and burning micturition in men (n=85)	5% (4/85)	1%-11%
Vaginal discharge in women (n=192)	32% (62/192)	25%-39%
Lower abdominal pain in women (n=144)	29% (42/144)	21%-37%

* In men- NG/CT ; In women- NG/CT/TV/BV/Candida

6.4. Other factors associated with the presence of infections

Since only 9 men had an infection, a statistical analysis was not conducted. Nonetheless the distributions showed that a greater proportion of infections were in men who were illiterate (12 %), worked in the informal sector (7 %) and had an approximate monthly income of more than Rs. 1500[13] (7 %) as compared to those who were literate (4 %), worked in formal employment (2 %) and reported a lower income (4 %). None of these differences reached statistical levels of significance.

In women, the univariate analysis revealed a significant association between infections and lower income (OR: 2.09; 95%CI:1.1-3.8; $p<0.01$). Forty percent of those with a monthly income of Rs. 1500 or less tested positive for an infection compared to 24 % of those who reported a higher monthly income (Table 6.5).

[13] Approx. US$ 30

Table 6.5. Estimates of association of any RTI/STI in women with socio-demographic characteristics and symptoms reported

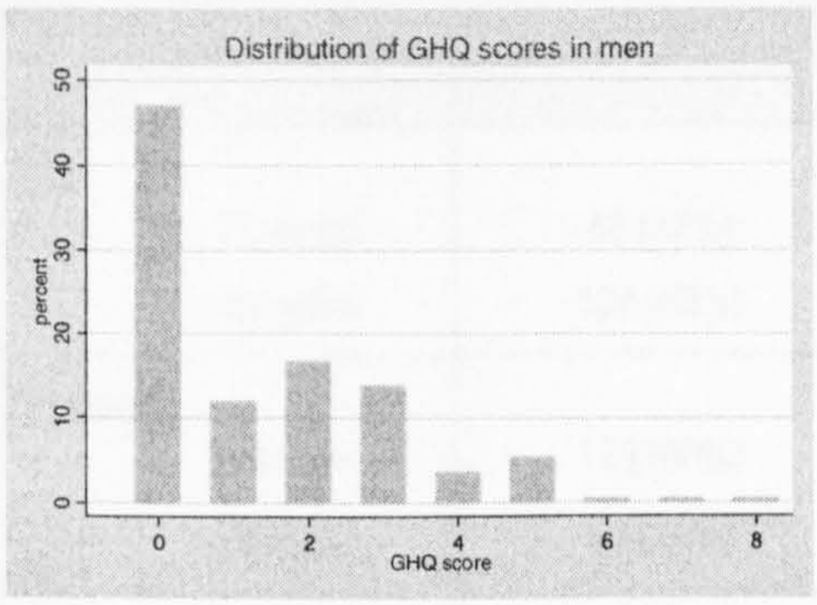
Variables	Proportion in the sample	Prevalence of an RTI/STI	Unadjusted OR (95% CI)
Age			
< 25 years	71 (36%)	19 (27%)	1
>25 years	126 (64%)	45 (36%)	1.52 (.8-2.8)
Education			
Literate	46 (23%)	12 (26%)	1
Illiterate	151 (77%)	52 (34%)	1.5 (.7-3.1)
Marital status			
Married	183 (93%)	58 (32%)	1
Unmarried/widowed	14 (7%)	6 (43%)	1.6 (.5-4.8)
Occupation			
Formal	4 (2%)	1 (25%)	1
Informal	193 (98%)	63 (33%)	1.5 (.1-14.2)
Income			
>Rs. 1500	98 (50%)	24 (24%)	1
< Rs. 1500	99 (50%)	40 (40%)	2.09 (1.1-3.8)*

* $p < 0.01$

6.5. Psychological morbidity as assessed through the GHQ-12

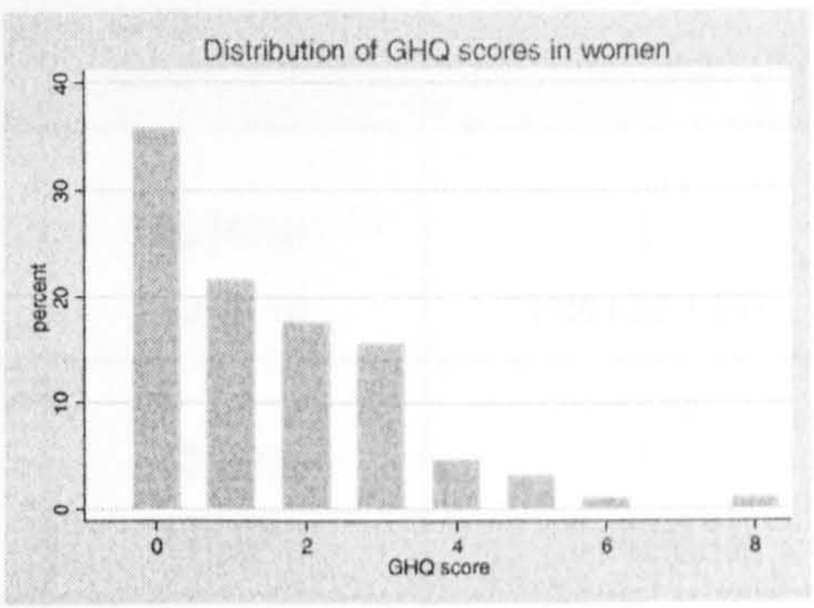
While a majority of the sample received a total score of 0 or 1 on the GHQ, around 40 % (41 % men and 43 % women) scored at or above the GHQ caseness threshold of 2. The distribution of scores obtained by men and women are shown in Figures 6.2.a and 6.2.b. Median values for both were 1. No significant differences were observed.

Fig. 6.2.a.



Median = 1; above threshold: 41%

Fig.6.2.b.



Median =1; above threshold: 43%

Associations between socio-demographic variables and GHQ caseness

As GHQ scores may be influenced by socio-demographic variables such as lack of education and insecure employment[133], high scorers were first analyzed by socio-demographic characteristics and then by symptoms, so that the confounding effect of any socio-demographic variables could be adjusted later. The distribution of GHQ (above threshold) cases by socio-demographic characteristics and the odds ratios for each can be seen in Tables 6.6 and 6.7 for men and women respectively.

Odds ratios at a marginal level of significance ($p<0.1$) were found for occupation in men (OR: 1.9; 95% CI- .93-4.10) and marital status in women (OR: 2.59; 95% CI- .83-8.04). See Tables 6.8 and 6.9. Forty five percent of informally employed men had higher GHQ scores as compared to 30 % of those in formal employment. Sixty four percent of widowed women had higher GHQ scores as compared to 41% of currently married women.

Table 6.6. Estimates of association of GHQ caseness in men with socio-demographic variables

Variables	Proportion in the sample	Proportion with GHQ threshold score 2 or more	Odds Ratios (95% CI)
Age			
< 25 years	62 (37%)	25 (40%)	1
>25 years	104 (63%)	43 (41%)	1.04 (.55-1.97)
Education			
Literate	133 (80%)	52 (39%)	1
Illiterate	33 (20%)	16 (49%)	1.5 (.68-3.15)
Marital status			
Married	138 (83%)	56 (41%)	1
Unmarried/widowed	28 (17%)	12 (43%)	1.09 (.48-2.49)
Occupation			
Formal	44 (27%)	13 (30%)	1
Informal	122 (73%)	55 (45%)	1.9 (.93-4.10)**
Income			
>Rs. 1500	73 (44%)	29 (40%)	1
< Rs. 1500	93 (56%)	39 (42%)	1.09 (.58-2.04)

** $p < 0.1$

Table 6.7. Estimates of association of GHQ caseness in women with socio-demographic variables

Variables	Proportion in the sample	Proportion with GHQ threshold score 2 or more	Odds Ratios (95% CI)
Age			
< 25 years	71 (36%)	33 (46%)	1
>25 years	126 (64%)	51 (40%)	.78 (.43-1.40)
Education			
Literate	46 (23%)	21 (46%)	1
Illiterate	151 (77%)	63 (42%)	.85 (.43-1.65)
Marital status			
Married	183 (93%)	75 (41%)	1
Single/widowed	14 (7%)	9 (64%)	2.59 (.83-8.04)**
Occupation			
Formal	4 (2%)	2 (50%)	1
Informal	193 (98%)	82 (42%)	.73 (.10-5.35)
Income			
>Rs. 1500	98 (50%)	40 (41%)	1
< Rs. 1500	99 (50%)	44 (44%)	1.16 (.65 -2.04)

**p <0.1

Association between symptoms and GHQ caseness

GHQ caseness (obtaining above threshold scores) was examined against symptoms of urethral discharge and vaginal discharge, reported at all and also compared across the key presenting complaints in men (dhat, burning micturition and others) and women (vaginal discharge, lower abdominal pain and others). These symptoms were selected as they form the entry point for the syndromic management flowcharts for men and women.

Results for men and women are presented in Table 6.8. Men who reported dhat at all were significantly more likely to have scored above the GHQ threshold score (OR: 2.28; 95%CI 1.1-4.4). Forty nine percent of men who reported dhat obtained higher GHQ

scores as compared with 29% of men who did not report dhat. In comparison with a presenting complaint of dhat, neither burning micturition nor any other complaints showed a statistical association with GHQ caseness.

Table 6.8. Estimates of association between GHQ caseness and key symptoms reported by men and women

Reported symptoms	Proportion in the sample	Proportion with GHQ threshold score 2 or more	Adjusted^ Odds Ratios (95% CI)
MEN (N=168)			
Men reporting dhat at all			
No	66 (40%)	19 (29%)	1
Yes	100 (60%)	49 (49%)	2.28 (1.1-4.4)**
Presenting complaints compared in men			
Dhat	82 (49%)	38 (46%)	1
Burning/painful micturition	57 (34%)	18 (32%)	0.55 (0.2-1.1)
Others	27 (16%)	12 (44%)	0.96 (0.3-2.3)
WOMEN (N=197)			
Reported vaginal discharge at all			
No	5 (3%)	3 (60%)	NA*
Yes	192 (97%)	81 (42%)	
Presenting complaints compared in women			
Vaginal discharge	133 (67%)	45 (34%)	1
Lower abdominal pain	15 (8%)	12 (80%)	7.86 (2.1-29.3)**
Others	49 (25%)	27 (55%)	2.28 (1.1.-4.4)**

^ Adjusted for confounding against selected socio-economic variables: occupation in men and marital status in women.

*Odds ratios not presented as nearly all the women reported vaginal discharge and the comparable groups of those with/without discharge were not meaningful.

**P<0.01

In women, as the majority (97 %) had reported vaginal discharge as a complaint, it was not possible to compare those with and without a discharge. Therefore, in women, the

analysis was limited to a comparison of the presenting complaints with GHQ caseness. The findings (Table 6.8), revealed that compared with a presenting complaint of vaginal discharge, women with a presenting complaint of lower abdominal pain were more than 7 times more likely and those with any other complaints were twice more likely to have obtained above threshold GHQ scores (OR for LAP: 7.86, 95%CI 2.1-29.3; OR for others: 2.28, 95%CI 1.1-4.4). 12 out of 15 women (80%) with a presenting complaint of lower abdominal pain scored higher GHQ scores as compared to 34% with presenting complaints of vaginal discharge and 55% with other complaints.

6.6 Summary of the findings

Both men and women presented with a cluster of symptoms, the common ones being vaginal discharge, backache and lower abdominal pain in women and urethral discharge, burning micturition and backache in men. Biomedically these are the classical presentations for a reproductive tract infection, either endogenous or sexually transmitted. However, our laboratory investigations showed that the prevalence of infections, particularly sexually transmitted ones, was low in this population of care seekers. CT was found in 3% men and 1% women; NG in 2.4% men and 3% women; TV in 6% women; BV in 20% women; CA in 6% women. The positive predictive values of symptoms for any RTI/STI were also low: urethral discharge-4%; dysuria-6%; vaginal discharge-32%; lower abdominal pain in women-29%. In men a complaint of dhat or urethral discharge was significantly associated with GHQ caseness (indicative of possible psychological distress) OR 2.28, 95%CI 1.1-4.4); no conclusive findings related to vaginal discharge could be arrived at due to the large proportion of women who presented with the condition (and lack of a comparable group without vaginal discharge). However when presenting complaints in women were compared, complaints of lower abdominal pain and other complaints were strongly associated with GHQ caseness, as compared with a presenting complaint of vaginal discharge.

The greater proportion of infections were found in men who were illiterate, informally employed and reported monthly incomes higher than Rs. 1500/month. In women

infections wer significantly associated with low incomes, below Rs. 1500 per month. Moderate associations existed between GHQ caseness and informal employment in men and being widowed in women.

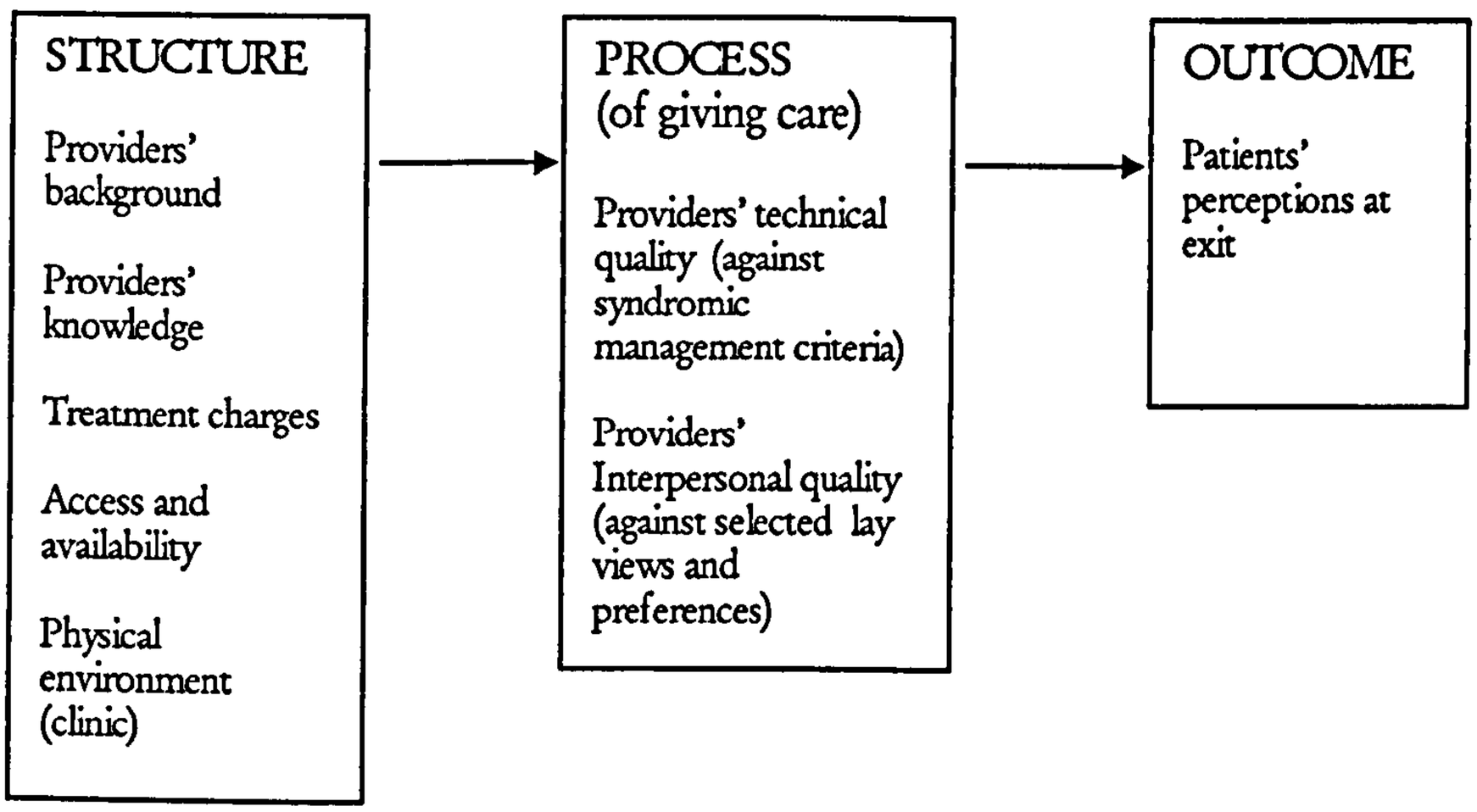
Findings are discussed in detail in Chapter 7 – Discussion, particularly in sections 7.1.5 and 7.3.

Chapter 7

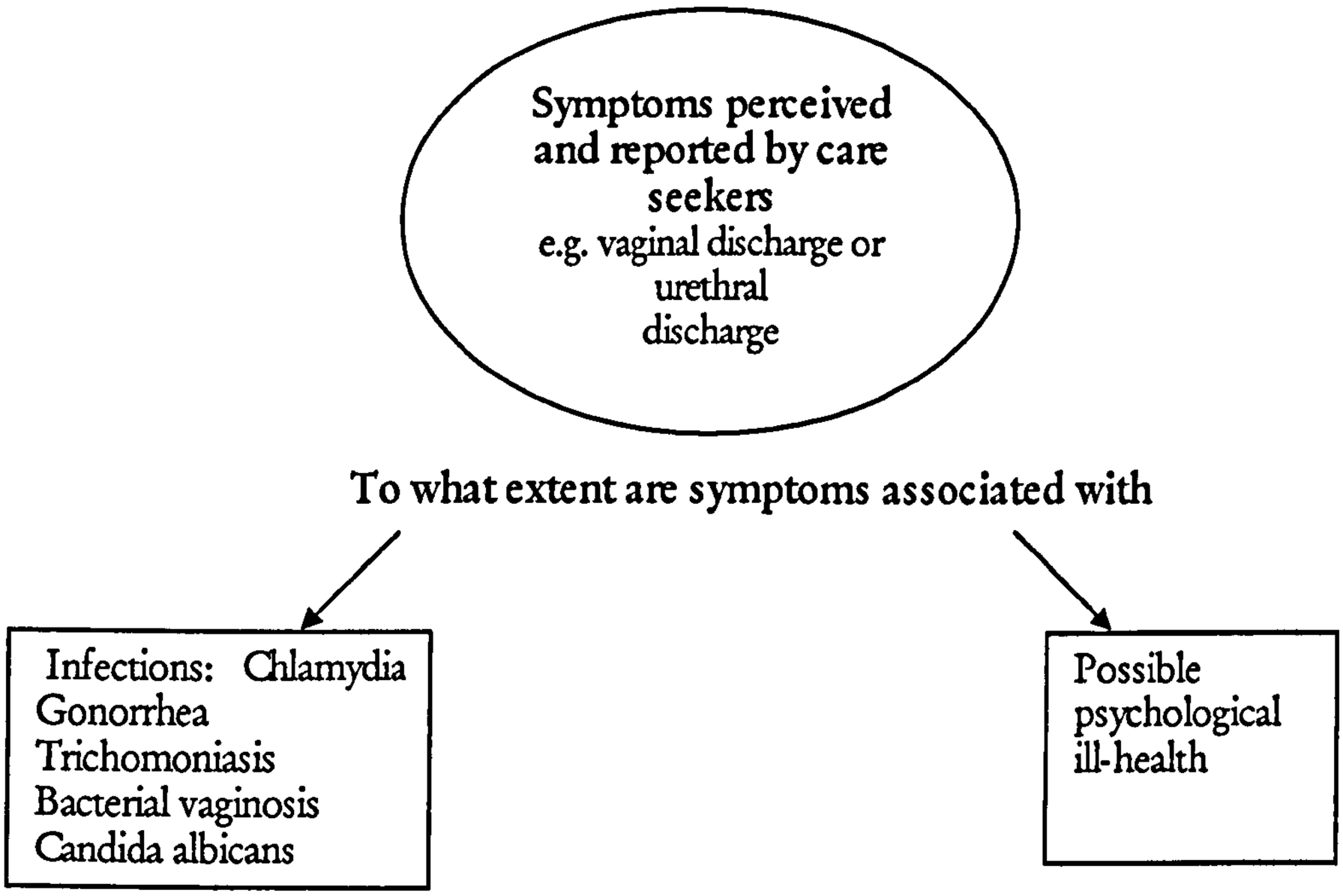
DISCUSSION

This chapter presents the consolidated and summarized research findings. Key findings and their implications are explained and discussed, particularly in relation to the literature. This is followed by a discussion of the methodological strengths and weaknesses of the research. Finally, important study implications and conclusions are presented along with recommendations for policy and further research.

This thesis set out to evaluate and describe the quality of health care that private practitioners in rural areas provide to men and women who seek care for genito-urinary complaints. As the literature on quality of care by informal providers was found to be limited, particularly with respect to sexual and reproductive health services, this thesis adopted a broad and comprehensive framework to observe and evaluate quality. Using this framework, quality related information was obtained from three main informational categories of care provision suggested by Donabedian[61] : structure, process and outcome, each with their respective elements, as shown in the diagram below.



The literature review also highlighted the uncertainness of etiologies related to reproductive tract morbidities that called for an investigation into the nature of the genito-urinary complaints that men and women seek care for. The diagram below illustrates the research associations that this thesis explored in relation to the care seekers' complaints and their possible etiologies.



Finally, the thesis drew upon the narrative accounts of rural communities to describe their perceptions of illness, of quality and of health seeking. This was done to locate the findings on providers and on morbidities within the larger socio-cultural setting of the rural communities.

7.1. Summary and discussion of the findings

7.1.1. The study communities

Summary of key findings

This study was located amidst low and middle income rural communities. A small but representative household survey conducted early on in the study areas revealed that 75% of the respondents lived in houses constructed of semi-permanent or impermanent material and did not own any of those household assets associated with upper income groups. The FGDs drew out people's concerns and preoccupations about their limited resources. The fact that the availability of financial resources played a crucial role in people's care seeking decisions – both when to seek care and where to go – was testimony to their limited resources. Men and women who came to seek care at provider clinics reported median household incomes of Rs. 1500 per month (approximately US $ 35), which would place them close to the international standard of $1.08 a day poverty line[163].

Communities were further characterized by high levels of illiteracy and informal agricultural activity among the women. This was mainly domestic or subsistence agriculture. Unlike women, more than 80% of the men were literate, but like the women, men too were largely engaged in informal activity like small agriculture or informal employment.

Discussion of findings

Women's literacy, at 25-35% (from the household survey and the clinic attendees data respectively), was much lower as compared to 50% in Tehri Garhwal district and 60% in the state of Uttaranchal, according to the 2001 Census[16]. Higher levels of female literacy in Uttaranchal (more than 70%) are to be found in the more urban districts of Dehradun and Nainital. Uttaranchal is notable as one of the higher female literacy states in India, a country with 54% female literacy. The data captured in our study point to the marked differences in female literacy that still exist between urban and rural areas in a high literacy state, and the dilution of rural statistics by urban ones. Such differences were not found with respect to male literacy figures that were well above 80% in our data sources and comparable to district, state and country level figures of male literacy.

This brings out a primary strength of our study: that it focused on some very rural communities and their health needs.

7.1.2. Perceptions of illness

Summary of key findings

Illnesses were typically perceived as symptoms or as clusters of symptoms and local terminology was descriptive of the condition or of etiologies. People's perceptions categorized genital illnesses as non-infectious or infectious. In general, men and women perceived a genital discharge and dysuria as commonly occurring but non-infectious. Locally held etiological explanations were embedded in the traditional Ayurvedic concepts of hot/cold foods and loss of vital bodily fluids (e.g. semen and bone marrow) that left a person weak and depleted. Men's primary concerns about dhat or urethral discharge were related to weakness and apathy that was attributed to loss of semen. Swapndosh or nocturnal emission in boys and young men described another condition of involuntary semen loss attributed to erotic dreams. Masturbation led to fears of penis shrinkage. Although they did not perceive these as pathological conditions, boys said they might still look for treatment for such problems. Some of women's concerns about white discharge were related to loss of bone marrow and a generalized weakening of the body. Women talked about their problems with greater ease and openness than did men. In our household survey, a large proportion of respondents - 43% men and 59% women - reported having experienced one or more genito-urinary symptoms during the last one year or more.

By and large, people did not perceive any clear links between commonly occurring genito-urinary symptoms and major infectious diseases like AIDS, even though they had heard of AIDS and described it as infectious, transmitted from man to woman, and fatal. Their health concepts were embedded in traditional beliefs but at the same time there was

also evidence of an interface with new knowledge through mass media and increasing geographical mobility.

Discussion of findings

Perceptions linked with Ayurvedic health concepts

According to Ayurvedic principles, all objects in the universe including the human body are composed of five basic elements: earth, water, fire, air and vacuum(ether)[26]. Any disturbance in the equilibrium of these elements can lead to sickness. This loss of equilibrium can happen due to dietary indiscrimination, undesirable habits, non-observance of rules of healthy living, seasonal abnormalities and improper exercise. Incompatible actions of the body and mind can also result in disturbances of the existing normal balance of the human body. In our study, people commonly linked illness and etiologies with eating certain types of foods, either too hot or too cold, and also with seasonal changes. These beliefs can be linked to Ayurvedic health concepts.

Semen loss and *dhat* syndrome: idioms of bodily distress

The way that communities in this study perceived genital illnesses, particularly *dhat* [an involuntary semen loss] and *safed paani* [white vaginal discharge], could also be linked to Ayurvedic concepts of semen and semen loss. According to Aurvedic texts, semen is produced when food converts to blood, which converts to flesh, which converts to marrow, which is eventually converted into semen[164]. Historically, semen is considered to be a most powerful and perfect bodily substance, more powerful than blood and its loss viewed with extreme anxiety. In a recent review of different historical sources from all over the world, psychiatrists Sumathipala et al found similar beliefs related to semen loss in the works of Greek, Roman and Chinese philosophers as well as European and American scholars of the 18th and early 19th centuries[15]. The authors quoted Tissot's (1728-1797) writings that losing one ounce of semen is more debilitating than losing forty ounces of blood, and Maudsley's (1835-1883) who was of the opinion that semen loss,

especially if it occurs through masturbation, results in serious mental illness. The review concluded that with industrialization and urbanization, anxiety about semen loss in the West diminished and the same was likely to happen in South Asia as well.

Semen loss was termed as dhat syndrome in India by Wig (1960) [93], a psychiatrist trained in the West. Dhat derives from the Sanskrit word dhatu meaning metal or vital bodily substance. Patients of dhat in different clinical settings have been known to present with vague somatic symptoms of bodily weakness, multiple aches and pains, loss of appetite, guilt and sexual dysfunction, all of which are attributed to loss of semen through nocturnal emissions, masturbation or with or after micturition[93,95,96]. In these studies, depression and anxiety were found to be the commonest associated psychiatric illnesses, affecting more than half the patients with presenting complaints of dhat.

More recently, studies of male sexuality and male sexual concerns in India have reported significant concerns that men have, related to semen loss, that could confound the diagnosis and management of symptoms with an infective pathology. A culture-influenced preoccupation with semen loss and its perceived adverse consequences has been found to lead to considerable anxiety[79]. Collumbien et al in a survey of 2087 Oriya men[165], found infectious and non-infectious categories of disease perception of 'problems relating to or affecting the genital area'. Broadly these could be further categorized into those perceived as sexually transmitted conditions (AIDS, ulcers, eruptions on the penis and pus from the penis), semen loss conditions (dhat and swapndosh), skin infections and anal conditions. Informants variously attributed semen loss to sexual reasons such as excessive masturbation, or to social factors such as heat in the stomach, improper diet or hard physical labour. In another Indian study, Verma and colleagues[166] distinguished between men's perceptions of non-contact problems (related to semen loss) and contact problems (syphilis like conditions, pus like discharge).

Vaginal discharge and women's concerns

Anthropological insights into women's perceptions of vaginal discharge have also highlighted the perception of vaginal discharge as a non-infectious condition. K. Trollope- Kumar, drawing upon her experiences as a doctor and anthropologist in the Garhwal region of India wrote: "Women complaining of *safed paani* also often complained of vague somatic symptoms that included burning hands and feet, dizziness, backache and weakness. Women were concerned about their condition and felt that progressive weakness would develop"[98]. Significantly, women usually attributed these to improper diets. Women in neighbouring Pakistan too, have been reported to attribute vaginal discharge to 'melting bones', consuming foods with perceived hot composition, poor personal hygiene and procedures like dilatation and curettage, delivery and induced abortions. None reported sexually transmitted infections as the perceived cause of their problems[110].

Implications of findings related to perceptions of illness

The findings of this thesis, related to perceptions of genital illness in men and women, viewed in conjunction with findings from other studies lead to the following conclusions. First, perceptions of commonly occurring genital conditions in men and women can be strongly coloured by cultural influences and thus represent concerns that can be quite different from their biomedical or clinical interpretations. Second, people's perceptions do tend to distinguish both infectious and non-infectious categories of symptoms but these may easily overlap and confound accurate reporting and diagnosis of the underlying conditions. Third, a non-infectious condition could also signal a state of psychological distress, such as the presence of a diagnosable depression and anxiety, which is perceived and reported as a somatic symptom. Fourth, even without any psychological distress, there may be several underlying psycho sexual concerns, particularly in men, that are linked with the reported somatic symptom and that require an equal or greater articulation and mitigation.

These implications are discussed further in section 7.1.5 and 7.3, especially with respect to currently used diagnostic procedures.

7.1.3. Treatment seeking – patterns and providers

Summary of key findings

Early actions

The earliest cures tended to be home based for all illnesses, including genital ones. In those instances where genital discharge and burning micturition were attributed to eating hot and spicy foods, cooling drinks and potions were perceived as the cures. People were familiar with and relied heavily upon locally available herbs and roots that were imbued with healing properties. It was also common to consult elders in the home or in the community who were believed to be knowledgeable about these cures. Women particularly, talked about approaching such herbalists who were typically old women but occasionally could also be men. For example, a renowned Ayurvedic practitioner, (a vaid) known by the name of his village as 'the vaid of Sursinghdar', was famous for treating vaginal discharge. People also self prescribed remedies including over-the-counter pharmaceuticals such as paracetamols and ointments for skin rashes and itching.

Decision making: personal and provider related factors

Decisions to seek care outside the home and community typically took into account the perceived severity of the illness and availability of financial resources. Decisions to seek care could be delayed due to various emotional and attitudinal factors related to the nature of the complaints. Men in particular talked at length about their feelings of hesitation, a sense of shame, guilt and fear of ridicule in sharing their problem with others and in seeking care for it. For women it was a practical issue of not feeling entirely comfortable approaching a male provider.

The first sought providers were those located nearby, those who were known to provide effective treatment, were well known and had good human qualities. The providers' behavioral skills were perceived as especially important in dealing with genito-urinary complaints. Both men and women could discuss their problems more easily with providers who were considered confidential, non-judgmental, open and frank. Women voiced strong preferences for female providers but few of these were available. Men and boys believed that specialists were required to deal with genital illnesses, such as those in distant town and cities who advertised their services 'on boards' outside their clinics. Local providers were not seen as providers of specialist or 'major' care, but men and boys still approached them for their advice on referrals or for first aid.

Both qualitative and quantitative data also suggested a sequence to people's care seeking as they moved from the nearby providers to more distant towns and cities seeking relief for their symptoms, and at times coming back to where they had first started. However, even in this circle of care seeking, they would probably never encounter a formally qualified provider.

Communities' perceptions of available providers

Several different types of provider categorizations emerged from the qualitative data: small 'doctors' (less knowledgeable) and big 'doctors' (more educated and knowledgeable); good and bad, near and far away, doctors for minor illnesses and those for major diseases, providers specializing in different types of illnesses and providers by sector (private, public or private charitable). In general the local, nearby 'doctors' were considered to be less knowledgeable and therefore most useful for treating minor illnesses and providing first aid and emergency care. Doctors who lived in the more distant towns and cities, especially in the big cities, were perceived as better educated with well equipped facilities. Women respondents knew that female 'gynaecologists' practiced in big cities.

Several differentiations emerged in the way that people spoke about private and public sector doctors. People generally referred to private providers by their names and spoke of them with a great deal of familiarity; in contrast government providers and facilities were generally referred to as the undiscerning 'sarkari' (government). There were several negative attributes associated with the functioning of public facilities such as inconvenient opening hours, corruption, backdoor sales of drugs, informal user charges and patient harassment. People also differentiated between their own expectations towards the private and public sectors. One of their perceptions was that paying for private services put them in a situation of greater control where they could demand greater accountability and better services from the private providers.

Discussion of findings

Rural communities and health services: other studies

Medical historians, anthropologists and health researchers over the last three or more decades have repeatedly documented the existence of a vast and informal private health sector in the Indian sub-continent that provides an enormously large proportion of curative health care, particularly in rural areas (see Table 1.1. in the Literature Review chapter). In recent years, studies of health seeking behaviour from the Indian sub-continent have reported that for reproductive health problems, men and women seek treatment from private providers, many of whom may not have a professional qualification[3,40,109,110] or might be indigenous practitioners such as *hakims* in Pakistan[167]. Our study provides additional meaningful information about the ongoing saga of rural health services in India. It not only confirms the patterns of care seeking in rural communities described by other studies, but also provides an in-depth and comprehensive description that is representative of private providers in rural areas of Tehri district. We found that 89% of the 127 private practitioners in the study blocks did not possess a formal qualification and 11% had a qualification in an indigenous system of medicine. At the time that we surveyed the practitioners (in 2002-2003), the health administration's records showed a total of 25 biomedically qualified doctors in

government positions in the entire district. There were also around 3 biomedically qualified private doctors in the district, who did not practice in the study blocks but in more urban locations in the district. The largest majority of practitioners in the study areas consisted of providers without a formal qualification.

This situation can perhaps be traced back to India's heritage of traditional systems of medicine, and the network of indigenous practitioners (vaids and hakims) who were the traditional mainstays of health care even before independence. However, India's public health system, created at the time of independence, followed the Western public health model of professionalized biomedicine. The report of the first Health Survey and Development Committee, chaired by Sir Joseph Bhore, an eminent civil servant, that provided the blueprint for the country's public health system, decided not to take into account the existing network of private providers in the country[27]. The Committee also recommended 'only one basic medical qualification for entry into the profession throughout India' and that 'portal of entry' was a University degree[168]. Subsequently, shorter courses of study in modern medicine, leading to a diploma called the Licentiate of Medical Practice (LMP) were abolished in favour of a university degree with five and a half years of study after 12 years of schooling (V. Ramalingaswani in The Rural Private Practitioner, 1995[6]). The indigenous systems were also professionalized and codified along the same lines as the Western system, with standardized curricula, university education and codes of professional practice by an Act passed in 1970[32]. Legislation might have restricted the flow of medical graduates into the profession, but it did little to abolish the presence of rural private practitioners whose qualifications did not conform with the new regulations. Indeed, studies over the last 30 years provide sufficient evidence of a steady supply of new entrants into the field, possessing none of the rigidly codified and regulated qualifications.

Takulia et al report that in 1972 the Indian government decided to train and involve village practitioners in full time rural practice in government financed medical care services, on a pilot basis[8]. Unfortunately the practitioners themselves had little interest in this scheme due to the poor stipends offered and the requirement that they follow rigid

government norms[6]. In 1977, political leaders in India made an unsuccessful attempt to create a nationwide cadre of community health workers on the grounds of China's barefoot doctors, but the village practitioners were not included in this Scheme[169]. In this paper, Leslie also cited the works of eminent Indian health scholars and activists such as D. Banerji, T.N. Madan and V. Ramalingaswami, who critiqued the inability of health planners to take into account the social context of health needs of the people and of being unable to provide a basic doctor for comprehensive rural health care. Other scholars over the years have also documented the inability of the public health system to meet some of the basic health needs of the largely rural Indian population[5,6].

Our study confirms the physical and psychological distance that continues to exist between rural communities and the public health system. Some of this may be explained by the gulf between the social and cultural reality of these communities and the formal public health system based on the principles of Western professionalized biomedicine. We found communities that were still quite embedded in traditional notions of health and healing which are antagonistic to many of the principles of modern medicine. Although modern medicine has been welcomed in a superficial manner for its rapid curing properties; its theories and regulations have been far less assimilated. People showed little understanding of the germ theory of disease or of the possible ill-effects of biomedicines. Their way of measuring a provider was not by his qualifications but by the efficacy of his medicine. This was their observable indicator of a provider's technical quality. Provider's behaviour, his human skills and a display of kinship meant a great deal to these people. They expressed helplessness and frustration at the harassment and inconsiderate treatment they had to suffer in public facilities. Helplessness because they were unable to demand accountability and user friendly services from the public sector in the same way that they could from private providers. In contrast, during the course of our study, we often heard professionally qualified medical doctors refer to the rural communities as superstitious, ignorant and illiterate.

Some implications of findings related to health care and providers in rural areas

In 1976, Dr V. Ramalingaswami, director of AIIMS, and a leading advocate of reforms to adapt the medical education to the needs of the country argued that the medical profession should turn from the "over professionalized, over centralized, over fragmented, over mystified, over sized and capital intensive system and seek out alternatives which were cheap and yet scientific and nearer the people"[169]. Three decades later our study finds strong reason to support the same call, and argues not only for engaging with existing rural providers, but of reviewing the appropriateness of present professional medical education for meeting larger public health needs. The fact that providers without formal qualifications have continued to provide a large proportion of health services over the years provides evidence of a constant addition of new entrants into this health market. Not only is there a need to make more effective use of the available set of providers in current practice but to also find ways of intervening in the unregulated training system that is informally training and churning out these providers. One possible solution for spreading the benefits of modern medicine for greater common good might lie in reviving the shorter medical courses of the pre-independence era that produced licentiates who were ready and able to work in rural areas.

These implications are discussed further under the Conclusions section 7.3.

7.1.4. Quality of care by providers

Summary of the key findings

Perceived quality:

People perceived quality as an attribute of good providers (see Chapter 4-Providers and Quality of Care). It was an evaluated attribute, and people based their judgments on observable indicators of quality. Thus, although a providers' degree was considered

important, the measure of that degree was perceived to lie in the efficacy of the provider's medicine. Similarly there were indicators for interpersonal quality. These two domains: technical competence and interpersonal and human qualities emerged as the most important in people's perceptions. Importantly, these evaluations were not limited to a single encounter but formed over a period of time and over numerous encounters. People formed opinions about providers' skills and shared these opinions with others in the community. Providers' perceived quality played an important role in care seeking decisions that people made, but so did the overall costs associated with the process. In short, people looked for medicine that was cheap, effective and available nearby from a friendly and well known provider. Providers' open and non-judgmental attitudes and confidentiality were perceived as especially important for care for genital illnesses.

Evaluated quality:

This study concerned itself with assessing quality from the perspective of providers (as providers of care) and their patients (as users of care), while recognizing that this is still only a part of the fuller picture of quality that also includes the perspective of health authorities whose role it would be to ensure good governance of health and of maintaining public health and well being (for more details please see the Literature Review and Methods chapters).

To assess providers' quality and the users' perspective, this study used Donabedian's structure, process, and outcome framework. The focus on technical as well as interpersonal quality in the 'process' dimension was inspired by Bruce's framework, although most of the observable indicators for interpersonal quality were derived from community discussions and interviews. Structural elements included providers' qualifications, background, access/availability and physical environment of the clinic and treatment charges. The access and availability elements correspond with Bruce's 'appropriate constellation of services'. The outcomes focused on people's views at the end of their interaction with the provider. Study findings are summarized for each of these elements in the following paragraphs.

Structure (see Table 5.1 in Chapter 5 – Evaluated Quality)

Providers background: In the sample of 60 providers only 7 possessed a formal qualification in an indigenous system of medicine. Fifty three providers had degrees and diplomas in disciplines such as 'electrohomeopathy', 'integrated medicine' and many others that were not officially recognized by the government. There was only 1 female provider, the others were all male, with a mean age of 37.5 years. A majority had completed 12 years of schooling and had been in practice for more than 5 years. Fifty one providers had been attached with other doctors as apprentices or as 'compounders' and had learned their skills on the job. The majority (68%) were natives of the same district.

Knowledge: A large majority of providers had some correct knowledge of prevention advice for STDs and of the harmful consequences of STDs, but few providers attributed an abnormal genital discharge to an infection or to unsafe sex. More commonly they attributed an abnormal vaginal or urethral discharge to socio-economic, cultural and also psychological factors. These included eating hot and spicy foods such as meat and eggs, consumption of alcohol, malnutrition, hard work, lack of personal body hygiene, dhat and masturbation, as well as worries and mental tensions (especially in women). They also gave other health related reasons such as irregular menstruation and previous obstetric problems in women, and fungal infections and swelling in the urethra in men. Providers frequently gave more than one cause as the response and many of those who attributed a discharge to an infection, also gave other non-biomedical causes. More than half of the recognized providers too gave such multiple responses although typically in combination with an infection.

These type of responses from the providers display striking similarities with the local communities in the ways that genital symptoms were perceived and understood. Socio-cultural and traditional notions of health seemed to hold their sway over the providers' belief systems as well as that of communities, but just as with communities, there was

strong evidence of the awareness and influence of modern biomedical knowledge on providers too. Perhaps the greatest evidence of the influence of modern biomedicine lay in the providers' responses (and also later their practices) related to drug dispensing. A little more than half the providers said they would treat a urethral discharge or a vaginal discharge with antibiotics, usually in combination with indigenous formulations. Forty two percent of provider said they would treat a vaginal discharge only with indigenous formulations and only 28% said the same for urethral discharge.

However, only two providers could name one correct drug from NACO's revised therapeutic rregimen for urethral and vaginal discharge syndromes. The majority named the antibiotics that were used before the new recommendations were made.

Access/availability and physical environment of facilities: Provider clinics were strategically located in small market places that served as an economic hub for the surrounding villages. Most of the clinics were open for 8 hours or more daily. Seventy percent clinics offered privacy of consultation. Eight six percent providers stocked condoms. More than 85 % providers stocked and dispensed both allopathic and indigenous drugs.

Charges: Majority of the providers charged between Rs. 51-100 (approx. $1-2) on average and the median value was Rs. 80. The price of drugs was included in the total charges. A majority of the providers gave treatment on partial credit to some of their patients.

The Process of Quality (see Tables 5.2 and 5.4 in Chapter 5 – Evaluated Quality)

The process of quality: In relation to the syndromic management procedures, providers' technical quality was found to be inadequate. They performed a median of 1.5 procedures out of six. Performance was inconsistent across the sex of the patients. Providers generally dispensed a blend of indigenous and biomedical drugs and a majority gave up to 3 drugs on average per patient. Ciprofloxacin and norflox were the antibiotics commonly given and at the time of this study (2003) these drugs were under revision by

NACO due to the finding of ciprofloxacin resistant gonorrheal strains in the Asia-Pcific region. The revised recommendations include the macrolide group of antibiotics such as single dose azithromycin and cephalosporins such as ceftriaxone. None of the providers were aware of these or dispensed these. However, 4 providers did dispense one correct other drug in the right dosage to one of their patients (Metronidazole 400mg, twice a day for 7 days).

Providers' interpersonal quality was better. More than half the providers (52%) demonstrated high levels of interpersonal skills, the highest being non-judgmental attitude and language use. Indeed it was this interpersonal and human aspect of providers' care that was so often brought up by their patients during the exit interviews. More of the unrecognized providers demonstrated higher levels of friendliness and good language use. More of the recognized providers demonstrated higher levels of attentiveness, openness, privacy and reassurance.

The finding that providers' technical quality was inadequate against syndromic management guidelines needs to be viewed in relation to this study's significant epidemiological finding that a majority of the patients were not suffering from any diagnosable infections. Use of the syndromic guidelines with this population would have led to considerable overtreatment and the guidelines were therefore not appropriate for this population. In conclusion, the fact that the providers did not perform many of the syndromic steps would have to be interpreted differently and with caution, as it does not constitute sufficient evidence of inadequate technical quality. However the large proportion of antibiotic dispensing is what then stands out as a negative aspect of technical quality. This is discussed further in the discussion of these findings in the section 'Quality of care: A Discussion of the Findings' that follows after the next section on outcomes.

Determinants of quality: Providers' qualifications were significantly associated with technical quality ($p < 0.003$) but not as significantly with interpersonal quality. Providers' knowledge, at middle levels of knowledge, was associated with technical quality ($p < 0.04$)

but this relationship did not show a similar increase with higher levels of knowledge. Qualified providers who had a speculum available in the clinic, demonstrated the highest number of technical skills (median 3.75). Providers' interpersonal quality was strongly associated with increasing treatment charges ($p < 0.02$) and with the availability of a speculum and condoms in the clinic. Patients' gender and marital status also influenced providers' quality. Providers were more likely to provide better technical quality to men and better interpersonal quality to women. They were twice as likely to be friendlier (OR 2.08, 95%CI 1.0-4.3) and more attentive (OR 1.93, 95%CI 1.0-3.6) with women than with men and five times more likely to demonstrate appropriate language use with women (OR 5.16, 95% CI 2.6-10.0). As for the technical procedures, providers were less likely to perform any of the technical procedures with women (OR for overall technical quality with women: 0.34, 95%CI .1-.8) except for discussing partner treatment (which they were twice more likely to do with women – OR 2.15, 95%CI 1.2-3.7). With respect to marital status, providers were less likely to be non-judgmental with unmarried men (OR 0.21, 95%CI .04-1.0) and more likely to conduct a behavioral risk assessment with them (OR 5.78, 95%CI 1.5-21.3).

Outcome (see section 5.3 in Chapter 5)

In this study, the outcome of the patient provider interaction was explored in terms of what patients had to say about the process. Patients talked about observable indicators of providers' quality that they had liked. While in the FGDs and the household survey interviews, the efficacy of provider's medicine had occupied a large space, in these post interaction responses, people talked more about the provider's good behavior and his human qualities. It was also clear that people, in referring to this encounter, were describing and reaffirming their views of the provider formed over numerous encounters, and in relation to attributes that were important to them. Thus people's quality assessments were not limited to this single encounter. In fact patients who declined to comment or could not think of what to say attributed their positions to feeling unwell and distressed, both physically and mentally, or responded that they had not had enough

experience with the provider to form a judgment about him. Some said they would reserve their judgment until they felt they were cured by the provider's medicine.

Quality of care: a discussion of the findings

One of the problems noted with quality of care studies has been the lack of simultaneous information about the etiological nature of the clinical conditions involved, which makes it difficult to interpret performance outcomes[170]. Our study examined quality against prescriptive technical criteria for case management of RTIs/STIs and also investigated the underlying infections. In this way this thesis could comment on the technical quality of providers in relation to the etiology of the complaints. This is one of the strengths of this study. The study also provides a more complete picture of quality from the perspective of providers and users.

Issues related to structural elements of providers' quality (qualifications, knowledge, access/availability and treatment charges)

A key feature of the providers was their ease of access and availability. When viewed in the light of communities' responses, these providers' easy access, long hours of availability and good interpersonal skills stand out as notable features contributing to their widespread presence. A majority of the patients spent nothing or very little to travel to the clinics. This is perhaps one of the reasons why they were willing to pay the providers' treatment charges, as any other costs associated with the treatment were none at all or very few. An earlier study by Bhatia and Cleland on health care seeking and expenditure by young mothers in South India found that the average cost per consultation (including the cost of the consultation, drugs, travel and other indirect costs) was Rs 75 for a private practitioner[80]. One consultation could include more than one visit and on average included 1.76 visits. The study was based on a survey conducted in 1993. The median treatment charges incurred in our study amounted to Rs. 80 and these included primarily the cost of consultation and the cost of the drugs that were dispensed as travel costs incurred by patients were negligible. A closer look at the data also

revealed that a majority of the patients had received a full dose of 5-7 days of drugs, thus constituting a full consultation as defined by Bhatia et al, rather than a single visit. The treatment charges in the two studies would then be quite comparable with the higher charges in our study reflecting price escalations. A recent World Bank sponsored study[171] of public and providers in urban area of Delhi found that providers' average treatment charges per visit were much lower and ranged from Rs. 15.2 charged by providers of the lowest ability quintile to Rs. 25.2 charged by providers of the highest ability quintile. This data included public providers as well and this could partly account for the overall lower charges than what our study found. On speculation, another reason for the lower charges in the Delhi study could be the different types of market factors operating in rural and urban areas. Providers in poor urban areas are likely to be far more concentrated, be in greater competition and be seeing a larger caseload of patients than rural providers, all of which could account for their lower charges per visit than in rural areas. Charges of urban providers are also likely to differ across different socio-economic neighbourhoods, with those in more affluent neighbourhoods charging a lot more.

There were few providers with a recognized qualification in our study areas. This reflects a grim reality of the rural health scenario in India. Qualified providers definitely demonstrated higher technical skills and this could be attributed to their better and longer formal training. However, no significant differences emerged in their knowledge levels across the 3 categories of knowledge scores (3-4/5-6/7-8). Eighty five percent of the recognized and a little less than 80% of the unrecognized scored 5 or more correct responses. This is probably explained by the fact that all the providers in that region had received a training in 1998 related to family planning services and prevention of RTIs/STIs. This could have contributed to the improved knowledge levels of the unrecognized providers that were reflected in their current knowledge assessment. Similarities in knowledge of the two types of providers also extended to their perceived causalities of common symptoms of genital illness. They commonly attributed these to non-biomedical causes and even when an infection was stated as the cause, it was frequently combined with another non-biomedical cause. The recognized providers were all formally trained in Ayurvedic medicine and that was reflected in their responses.

Ayurvedic training also includes a component of modern medicine and pharmacology. Thus the recognized providers also perhaps recognized the importance of infections more than the unrecognized.

Issues related to technical quality of care

The providers were found to be inadequate and inconsistent in their performance of the mandated procedures for management of RTIs/STIs. However the study also found a weak association between the presence of lab diagnosed RTIs/STIs and the symptoms that care seekers presented with. This implies that the currently used syndromic management procedures alone were not quite suitable for diagnosing RTIs in this population. Elsewhere in India too, both in community based[172] and facility based studies[84], syndromic management algorithms based on risk assessment and speculum assisted clinical examination, have not been found to be an efficient way of diagnosing women with cervical or vaginal infections. These studies suggest that in low prevalence communities, the algorithms could lead to considerable over treatment, while among sex workers, algorithms could miss out a large number of asymptomatic cases[173].

Nonetheless, providers in this study did perform some of these procedures and those that were performed quite often by most providers included taking an illness history, and discussing partner treatment with the patient, especially with women patients. The latter may imply that some providers did have an underlying knowledge of sexual transmission of disease but the fact that they were doing it more with women than with men, may also imply a lack of clarity about transmission routes: that STIs can be transmitted from men to women as well as from women to men. On the other hand this may have been the providers' way of finding out from women about their male partners' symptoms, and, if so, they could attribute her symptoms to a sexually transmitted infection acquired from their male partner at home. Why the providers discussed partner treatment less with their male patients is unclear.

It was also interesting to note that procedures least performed by providers were genital examination and risk assessment and, although 88% stocked condoms, only 45% counseled some patients for condoms. The reasons may be providers' lack of knowledge, or their personal inhibitions about handling patients' intimate body parts and exploring sexual issues with them. On the other hand it may quite simply be that providers recognized that these symptoms were not due to an infection at all and therefore saw no reason to ask about risky behaviours or do an examination. On their knowledge assessment, providers were found to be knowledgeable about prevention advice (for patients with a urethral discharge and genital ulcers) and of the harmful consequences of STDs and yet few of them (correctly so, perhaps) attributed an abnormal genital discharge to an infection or unsafe sex. Like the communities, it is possible that the providers too did not see a clear and consistent link between commonly occurring symptoms and sexually transmitted infections and this might well explain why they did not perform some of the key syndromic management procedures such as risk assessment and genital examination. However, our findings also show that 83% of the providers gave antibiotics, the common ones being ciprofloxacin and norflox. At the time of this study (2002-03), ciprofloxacin was still being used as the recommended first line treatment for gonorrhea[161] and NACO, in recognition of evidence of ciprofloxacin resistance in India, was in the process of revising the recommended first line therapy to Azithromycin[160]. So, it is likely that providers were giving these drugs as treatment for an STI, particularly gonorrhea. However none of them were found to give the drug in its recommended dose at the time (single dose of 500 mg).

In relation to the epidemiological and qualitative findings of this study, however, it cannot be easily concluded that the technical quality of providers was inadequate. Using the syndromic yardstick to assess technical quality may have been inappropriate as this would not have been the best management technique for this population with a low prevalence of infections. On the other hand, the fact that providers were not carrying out most of the sydnromic procedures matches with their perceived causes of the commonly occurring symptoms of genital illness and also with community perceptions, wherein genital illnesses were largely attributed to factors other than bio-medical.

Providers' responses however also reflected a unique mix of knowledge: traditional as well as modern biomedical. This could explain why some performed a combination of some bio-medical and some non-biomedical procedures (such as condom counseling combined with socio-cultural advice on food habits). A more ethnographic style of research would be well suited to capturing such details of provider behaviours.

Nonetheless it is true that more than 80% providers dispensed antibiotics, mainly ciprofloxacin and norflox that used to be the drugs of choice for STIs until they were revised by NACO in 2003-04. They rarely referred patients. This is probably the most negative aspect of their technical quality and the drug dispensing may well reflect the influence and reach of the pharmaceutical industry in rural health markets. Most of these providers said they were visited almost every month by pharmaceutical representatives.

The quality of care of rural private providers for RTIs/STIs is not known to have been systematically assessed earlier using patient-provider observations. However, assessments of knowledge and practice of rural providers for other clinical conditions have shown deficiencies in case management of acute respiratory infections[7], tuberculosis[52] and malaria[53]. These studies found providers' practice to be largely inconsistent with the national guidelines, with concurrent deficiencies in provider knowledge related to case management. Providers were likely to base their diagnosis on a superficial illness history and miss out some of the critical steps in diagnosis, e.g. checking the respiratory rate and chest in-drawing for pneumonia. Few providers were found to send their patients for laboratory tests. In our study too, none of the providers referred their patients for laboratory investigations, and diagnosis was based largely on an illness history related to the symptoms. This could be due to several reasons: lack of nearby laboratory facilities, patients' lack of financial resources, provider not having perceived the need for a lab test or provider's own economic self interest in attempting his own first line of treatment.

How does the quality of rural providers compare with urban, qualified providers? A recent World Bank study[171] by Das and Hammer compared 205 public and private

doctors in seven neighbourhoods in Delhi. The authors evaluated 'competence' (what providers know) through vignettes, and 'practice' (what providers did) through clinical observations. The sample of providers included private MBBS degree holders, public doctors (all had an MBBS degree) and private non-MBBS degree holders (similar to the samepl in our study). Poorer neighbourhoods had a higher percentage of non-MBBS doctors. In general MBBS doctors were more 'competent' than non-MBBS ones, and private doctors more than public ones, but with enormous variations. One group of public doctors (mainly those in small clinics in the city) were only a little better than their non-MBBS counterparts. Another group of public doctors from larger public hospitals was only a little less competent than their private MBBS counterparts. Providers' competence did increase on average with qualifications and neighbourhoods, but again with enormous variation so that it could not easily be guranteed that an MBBS doctor in a rich neighbourhood would indeed be highly competent. The authors found that overall the quality to manage five different clinical conditions was quite low, in terms of making a careful diagnosis and providing appropriate treatment. The public sector was more prone to not doing steps that should have been done, but although the private sector performed better in practice they were found to be doing too much, particularly in terms of overprescribing antibiotics and again not behaving in the patient's best interests. Overall, competence was correlated with practice, but there was a big gap between providers' competence and practice, more for public providers than private, and the gap tended to increase with higher levels of competence.

Private sector providers in the Delhi study spent more time per patient (5 minutes) than public providers (2 minutes) while the vignettes took 15 minutes on average. The difference in the length of consultations between private and public sector providers has also been reported elsewhere. Bhatia and Cleland[174] found in their survey of women in South India that the mean length of a gynaecological consultation was 6.67 minutes in the private sector and 3.56 minutes in the public sector. In the private sector, 57.5% of the consultations lasted for 5-9 minutes and and 19.5% lasted for more than 10 minutes, while in the public sector, 81.2% of the consultations lasted for less than 5 minutes. In our study the median length of the consultations was 15 minutes, with a minimum of 7

minutes and a mixiumum of 40 minutes. The median length remained consistent across the rank order of observations (first to sixth) and did not show any fluctuations that could be explained due to observer biases. However, the author during her personal observations noted that the providers often paused for a few minutes between their questioning and discussion with the patient, and also spent some time writing notes about the patient. Some of the time spent could be due to these provider mannerisms which could be related to the presence of an observer. Nonetheless it is true that these providers have a relatively smaller daily caseload of patients which puts them is a strong position of being able and willing to spend a longer duration of time with each patient.

The length of time per interaction can be a useful marker of providers' quality, in terms of whether the provider spent sufficient time with the patient - asking questions, doing an examination and explaining treatment. In our study although the average duration of the consultations was quite long, it cannot easily be concluded that this was all time well spent by the provider. What it does suggest is that with better skill training, lack of time would probably not be a significant deterrent to use of those skills in providers' practice.

A final conclusion to be made with respect to rural providers is that they present some very real strengths such as access, interpersonal skills, more available time per patient and a 'connect' with the socio-cultural fabric of the communities they serve. These strengths must be enhanced to improve health care and outcomes in rural areas. Providers are likely to be short of some technical standards, but as evidence suggests, qualifications or competence alone are not the only prerequisite for provision of much of basic health care of optimum quality. It is also true that a lot more needs to be understood about rural communities and their illness perception, reporting and epidemiological profile, before drawing conclusions about the technical skills of providers and about ways to improve these. Providers' drug dispensing definitely needs to be rationalized and this is likely to need strong interventions to regulate the pharmaceutical industry first.

Factors that influence providers' quality of care

In our study, providers' technical skills were strongly associated with qualifications but not with higher levels of knowledge. These findings could be considered similar to the Delhi study, although our sample was restricted to non-MBBS providers and was much smaller. A formal ISM qualification in India requires 5-plus years of full-time university education in that system of medicine, as well as some basic instruction in modern biomedicine. Thus providers in our study who had a formal ISM qualification could be expected to have a higher level of skills than the others, and this explained their superior technical performance. However there were no significant differences between the two groups of providers in terms of their knowledge levels. Comparable high levels of knowledge existed in the non-formally trained providers as well and these might be explained in two ways. First, this difference could be due to differences even between the various unrecognized qualifications, based on the duration and type of training imparted within that qualification. Thus providers with a qualification in 'electrohomeopathy' (BEMS) might have undergone a longer and more stringent medical course than 'Bangali' doctors or simply 'RMPs'. The difference in knowledge levels might also be attributed to good retention of a previous training in non -clinical Family Planning Services and RTI prevention (in 1998) that all providers in the district were provided as part of a large USAID/government of India/government of UP family planning services project[175], with which the author was also associated. In the same training, providers were also introduced to condom stocking and dispensing and it was indeed a positive finding that 5 years post training, 88% providers were still stocking condoms in their clinics. Unfortunately, more than half of the providers did not discuss condom use at all with their patients. It is likely that they only advocated it for family planning purposes, and if so then these providers were missing a vital opportunity to promote condoms for STI prevention.

Providers knowledge levels were associated with their technical quality only at the middle level of knowledge and not at higher levels. This could reflect a lack of direct association between some of the knowledge questions and the technical skills that were observed. It

might also reflect an increasing gap between providers' knowledge and practice with increasing levels of knowledge, as was reported by Das and Hammer in their Delhi providers' study[171].

A major concern related to health providers in developing countries, both professional and semi-professional has been their indiscriminate and irrational drug dispensing or prescribing[176]. Studies of pharmacists and various types of health professionals have highlighted the inappropriate distribution of medicines and of multiple prescriptions per encounter . In India and in neighbouring Pakistan, health providers (both professionally qualified and informally trained) have been found to excessively prescribe allopathic medicines such as antibacterials, antiamoebics, antidiarrheals and various types of antibiotics[6,177]. Dosage levels and schedules may not be in accordance with biomedically defined guidelines[53]. Factors for indiscrimate drug dispensing have been postulated to range from economic incentives and competition in an open market, to patient demand and lack of a drug regulatory climate[116]. This thesis did not attempt an in depth analysis of drug dispensing and the factors that governed choice of drugs given, particularly in relation to the market economics. (However, the author expects to do this analysis later for a potential publication). Confining itself to a basic description of drugs given and their appropriateness, this study found that a norm seemed to be followed by most providers: a majority dispensed a blend of 2-3 indigenous and biomedical drugs per patient which could have included an antibiotic (but not always). The majority of providers charged between Rs.51-Rs. 100 on average. The factors influencing this standard package of treatment were not analysed completely in this thesis, but a close association was found between treatment charges and providers' interpersonal skills. As the overall knowledge and skill levels of the providers were not very high, it is quite likely that the small proportion who charged higher than average (i.e. more than Rs. 100), could do so and still be sought by people because of their better interpersonal skills. This also implies that the relationships between drug dispensing and providers' financial incentives may not be as clear and as direct as has been hypothesized so far. There may be other factors like providers' interpersonal skills that could influence their charges besides the drugs that they dispense.

Literature suggests that patients' characteristics and their expectation or perception of the provider's role may also influence provider's behavior[115]. In Kamat's study of malaria treatment in Mumbai, one (professionally qualified) practitioner pointed out 'that most of his patients were construction labourers who lived in thatched huts in the vicinity of their construction sites. Given the poor quality of their housing, he thought it futile to advise them about protection from mosquitoes.' Chakraborty found that providers in her study varied quite a bit in their performance across different patients; this variation was found to be statistically associated with the number of patients: providers who saw more patients, varied more than providers who saw fewer patients. We did not look for intra provider variations in this study as we did not anticipate high levels of technical quality and much variation within providers. The average number of patients that providers in our study reported was 10-15 per day; this was not considered large enough to influence providers' technical quality across their patients. However we did find that providers' technical quality varied with patients' gender and marital status.

Providers were more likely to perform more technical procedures with men than with women and their interpersonal skills were better with women. As nearly all the providers in the sample were male, and as the socio-cultural milieu was quite traditional, this would have limited the ease of technical interaction between women patients and the male providers. Providers may have found it culturally inappropriate to question women about their sexual behaviors or advise them on condom use. In a way this was compensated by providers' greater friendliness and greater use of appropriate language with the women patients. A large majority of women who came to seek care at these clinics were illiterate and likely to be speaking in the local dialects. To successfully deal with their illiterate women patients, providers would have had to significantly draw upon their linguistic dexterity. It could also be that women, more than men, held providers' interpersonal skills dearer (and our qualitative data did suggest this) and this unspoken expectation was communicated covertly to providers. Providers' biases and attitudes also showed up in their reduced non-judgmental behavior with unmarried men. Although providers were more likely to do a risk assessment with unmarried men (see Table 5.9 in

Chapter 5) , which was a good thing, they were also more likely to make moral judgments about their behaviour, which was not good practice. We know that many single men may be coming here for advice and providers' attitude may pose a potential deterrent to providing the men good counseling.

This study was located in a mountainous terrain with low population density. Climatically and demographically this area was quite different from the hot, dusty and far more populous rural areas lying in the plains in the rest of northern India and elsewhere in the country. The geographic differences might reflect in some ways in the practices of the providers here, a good example might possibly be the fewer numbers of patients seen per day. However, the characteristics of providers in this study were quite similar to what has been found in other studies of rural providers in India, particularly Rohde and Vishwanathan's descriptions in 'The Rural Private Practitioner'. Still, we would caution from an overgeneralization of these findings to rural providers in other geographical locations of the country, especially in the plains areas with higher population densities and different disease patterns.

Implications of findings related to providers' quality of care

The findings of this study related to providers' quality of care hold important implications for larger and cross-cutting improvements in the public health scenario in rural and underserved areas. These are discussed in section 7.3 with respect to providers, and communities and in relation to the governance and maintenance of public health.

Briefly, with respect to providers, an important implication is that both knowledge and skills training would be needed as a key input to improve provider skills, although not at exceptionally high levels of knowledge. More important would be to ensure the sustained delivery of appropriate, good and consistent quality of technical care by these providers care that is also cost effective, leads to good public health outcomes and is humanely delivered. We have noted earlier that rural providers are and have been quite indispensable to rural India, they present a mass of valuable local resources and possess

recognizable strengths that can be further enhanced in the provision of basic health care. They must be recognized as a vital first tier in the rural health system scenario and addressed as such. A more long term finding related to providers is the need for the state to consider ways of creating an ongoing pool of providers of basic health services, perhaps through developing medical education programs of shorter duration than the standard five and a half year university degrees. These issue are discussed further in Section 7.3.

7.1.5. Symptoms, infections and psychological distress: findings from the care seekers data

Aetiological findings related to the genito-urinary symptoms that men and women presented with, suggest that the technical criteria (syndromic case management) used to evaluate providers' technical quality of care were inadequate for this population, due to the low positive predictive values of the symptoms[14] for the infections, and due to the psycho-social and cultural factors associated with symptom perception and reporting.

Both men and women presented with a cluster of symptoms, the common ones being vaginal discharge, lower abdominal pain (and backache) in women and urethral discharge, burning micturition (and backache) in men (see Table 6.1, Chapter 6). Biomedically these are the classical presentations of a reproductive tract infection, either endogenous or sexually transmitted. However, our laboratory investigations showed that the prevalence of infections, particularly sexually transmitted ones, was low in this population of care seekers. CT was found in 3% men and 1% women; NG in 2.4% men and 3% women; TV in 6% women; BV in 20% women; CA in 6% women. The positive predictive values of symptoms for any RTI/STI were also low: urethral discharge-4%; dysuria-6%; vaginal discharge-32%; lower abdominal pain in women-29%. In men urethral discharge was associated with GHQ caseness, indicative of possible

[14] Symptoms are the starting point for both vaginal and urethral discharge syndromes in the syndromic management algorithms. For women, one set of algorithms are based entirely on reported symptoms without an examination. For men, flowcharts recommend an examination to confirm the presence of a discharge.

psychological distress (OR 2.28, 95%CI 1.1-4.4); no conclusive findings related to vaginal discharge could be arrived at due to the large proportion of women who presented with the condition (and lack of a comparable group without vaginal discharge). However a small number of presenting complaints of lower abdominal pain in women were strongly associated with GHQ caseness. (see Table 6.10, Chapter 6)

A larger proportion of men with infections were illiterate, informally employed and reported monthly incomes more than Rs. 1500. However these were not statistically significant associations. For women there existed a significant association between infections and low income.

Socio-demographic factors marginally associated with GHQ caseness were found to be informal employment in men and being widowed in women. These were adjusted in the final analysis of symptoms and GHQ caseness.

Low prevalence of infections

We used gold standard diagnostic tests for NG, CT, BV and CA, and a new rapid test (latex agglutination) with high sensitivity and specificity for TV[141,142]. Other studies in comparable settings in the Indian sub-continent have also reported similar low prevalences in women[12,14,84,172]. These are summarized in table 7.1. and include both clinic based and population based samples.

Table 7.1. Prevalence of RTIs/STIs in women using laboratory diagnosis

Study population	NG (lab method)	CT (lab method)	TV (lab method)	BV (lab method)	CA (lab method)
Rural MCH centre, women attendees with complaints of vaginal discharge(Hawkes, 1999[12])	0.2% (culture)	0.9% (PCR)	1.5% (culture)	18.9% (Microscopy-Nugent's criteria)	12.6% (Microscopy)
Women attendees with complaints of vaginal discharge at a reproductive health clinic in New Delhi (Vishwanath et al 2002[84])	Not isolated (culture)	12.2% (DIF* assay)	10.0% (culture)	26.0% (Amsel's criteria)	25.4% (microscopy)
Present study –clinic based sample of 197 women	**3% (PCR)**	**1% (PCR)**	**6% (Rapid latex agglutination)**	**20% (microscopy, Nugent's criteria)**	**6% (microscopy)**
Community based sample of 1157 women in rural and urban Tamil Nadu, India (George et al, 2004[172])	3.9% (culture)	1.4% (PCR)	5.3% (direct wet mount)	Not tested	Not tested
Community based sample of 2494 women in a primary health care catchment area of Goa, India. (Patel et al, 2005[14])	1.9% (PCR)	1.3% (PCR)	1.2% (Culture)	17.8% (Microscopy, Nugent's criteria)	8.5% (Microscopy)

* Direct Immunofluorescence
NG- Neisseria Gonorrhea; CT-Chlamydia Trachomatis;
TV-Trichomonas Vaginalis; BV-Bacterial Vaginosis; CA-Candida albicans

In general, studies using laboratory methods similar to our study (PCR for NG and CT and microscopy for BV and candida) have reported similar low levels of NG (1.9%) and CT (0.9-1.4%) and higher levels for BV (17.8% -18.9%) and for candida (8.5%-25.4%). For TV, the use of rapid latex agglutination test has not been reported before in the Indian setting. All other studies have used culture or a wet mount. Using the rapid latex test, our results (of 6% TV) compare favorably with two of the cited studies (with levels of 5.3%-10%) one of which is also a similar facility based study[84]. Patel's study reported lower TV prevalences and the difference could be attributed to the fact that his was a population based sample. However the difference could also be attributed to the

different methods used to detect TV. PCR tests have been found to have a higher sensitivity and specificity (91.8 and 95.3%)[178] as compared with culture and wet mount - the traditional methods - but as a commercial PCR for TV is not available in India, and no studies were known that had used it, thus the TV findings in either study could not be compared with a gold standard PCR test. However, the prevalence found in our study was not unduly higher or lower than that found in the other studies. In general, even though this table included findings from both population based and clinic based studies, all studies reported low prevalences for NG; all except Vishwanath's study reported low prevalences for CT; TV findings ranged from 1.5%-10% but clinic based studies reported higher TV prevalences; there was not much difference in the BV prevalences (17.8%-26%); and candida prevalences were highest (25.4%) in one clinic based sample but ranged from 6% to 12.6% in all of the other studies.

Few studies that have used standardized diagnostic methods for detecting RTIs in men are available from India. An earlier review of studies on men found prevalences of 1.7-3.4% NG and 2.0% to 15% CT in community based samples of men[87]. Two recent studies, using PCR techniques, reported low prevalences of CT (1.1%-2.2%) and NG (5.4%) in both facility based[89] and population based[88] samples of men. Our study reported 2.4% NG and 3% CT in men, using gold standard PCR tests. A major strength of our study is the reliable data collected for men, in contrast to most previous studies of RTI/STI in India, which have focused on women.

We found low positive predictive values for vaginal discharge (32%) and for urethral discharge (4%). Other studies in India (described in Table 7.1) have also reported low PPVs for vaginal discharge ranging from 10.7%[172] to 38.0%[84] for different combinations of RTIs/STIs. For men, studies have reported low levels of NG and CT. Lindan et al's study of 690 symptomatic men seeking evaluation for STI symptoms or HIV testing at STI clinics in Mumbai found a low prevalence of 2.2% CT and 5.4% NG in the sample. Population based surveys, in addition, have found a large proportion of asymptomatic infections in both men and women. Joyee et al's survey of 1849 men and women in a healthy adult population of Tamil Nadu found that 68.8% of the CT positive cases

(1.1% overall prevalence) did not exhibit any of the symptoms of genital discharge or dysuria[88]. Grosskurth et al also reported similar findings: 66% of NG/CT positive men showed neither signs nor symptoms[179]. In our study, more than half of the NG/CT positive men did not report dhat or urethral discharge at all. These findings demonstrate that symptoms and even observed signs are not strongly associated with the presence of an infection.

The main implication of the low PPVs that we found in our study is that only about a third of women, and a lesser proportion of men would be correctly diagnosed as having an infection, if the diagnosis was based on the symptom of a vaginal or a urethral discharge alone. This would result in two-thirds or more of the patients being over treated unnecessarily. At the same time, more than half the infected men would have been missed out.

Symptoms and possible psychological distress

In contrast to the weak association between symptoms and RTIs/STIs, this study found a strong association between dhat in men and possible psychological distress as assessed through GHQ caseness. As described in the Methods chapter, the GHQ is a psychiatric screening tool used in population surveys. Higher than threshold scores on the GHQ suggest the probability that a person may be suffering from a non psychotic type of mild or moderate disorder that might otherwise go undetected in a primary care setting. Such disorders are commonly referred to as common mental disorders (CMDs) and they represent the same set of problems that were earlier categorized as neuroses[152]. The GHQ is not a diagnostic tool, and this study cannot claim to confirm the prevalence of psychological distress states in men complaining of *dhat*. Nevertheless, given the findings of previous empirical studies in India, described in the Literature Review chapter, that have reported a confirmed diagnosis of depression and anxiety in men complaining of *dhat*, our study findings on the association between *dhat* and psychological distress are not unexpected. Given the cultural association between anxiety and semen loss, it is quite

plausible that several of the men seeking care for *dhat* in this study may have been experiencing some form of psychiatric distress which was attributed to *dhat*.

However, this study could not arrive at any conclusive findings related to the association between vaginal discharge in women and GHQ caseness. As ours was a clinic based purposive sample of symptomatic care seekers, a very large proportion of women came with complaints of vaginal discharge – 98% (192 out of 197 women) reported the complaint at all, and 67% reported it as a presenting complaint. Thus the comparable group of women without any discharge at all was quite small (only 5 women) and the study lacked sufficient power to compare the two groups.

Nonetheless the association between vaginal discharge in care seeking women and depressions needs to be evaluated further as previous studies in India have amply demonstrated the existence of depression and anxiety in women complaining of vaginal discharge in community based samples[14]. As far back as 1988, Chaturvedi reported major depression and somatiform disorders significantly more often in patients reporting white vaginal discharge[100]. More recently in 2003, Prasad et al, using the GHQ 12, found higher scores associated with the presence of several reproductive tract complaints in women, of which vaginal discharge was the most common[180]. The study was located in a rural area of Tamil Nadu in India. In 2005, Patel et al, in their community based survey of 2494 women in Goa in India, found that psychological stress, as measured on a standardized psychiatric instrument (the CISR), was strongly and independently associated with a complaint of vaginal discharge[14].

Among all the women with a vaginal discharge in our study, 43 % obtained above threshold GHQ scores. Studies using the GHQ in primary health care settings have reported above threshold proportions ranging from 24 % to 57 %, with a median of 25 %[181]. The proportion of women in the present study with high GHQ scores would, in comparison, reflect a considerably high proportion of caseness and this is another reason for the need to further evaluate the association between vaginal discharge and psychological ill-health in women clinic attendees at rural primary facilities.

On the other hand, it is also possible that there may be other aetiological explanations for the vaginal discharge reported by the women in this study besides RTIs and psychological distress: studies have reported reproductive tract morbidity associated with surgical family planning procedures and obstetric complications at the last live birth[3], the presence of an intra-uterine device[14], hormonal factors or seasonal factors[92,182] or even a urinary tract infection. Due to limited resources and limited study objectives, our study could not explore these other factors.

It should also be noted that our study did not analyse relationships between infections and psychological distress. Thus, our findings must not be taken to imply that only those patients who did not test positive for an infection could be suffering from psychological ill-health. Co-morbidities of infections and common mental disorders (CMDs) are plausible; this too needs to be kept in mind as it bears treatment implications.

Our study however, found a strong association between GHQ caseness and presenting complaints of pelvic pain in 15 women who presented with lower abdominal pain in the sample. Although the numbers of these women were small, studies in psychiatric and primary care settings have often identified these symptoms as somatic or physical symptoms strongly associated with the presence of psychiatric morbidity[152,183,184].

Th findings of this study suggest that the earlier model used to illustrate the research questions could be modified as shown in Fig. 7.1 that follows:

Figure 7.1. A model to illustrate possible causalities for perceived and reported reproductive health morbidities, particularly symptoms of a genital discharge in men and women.

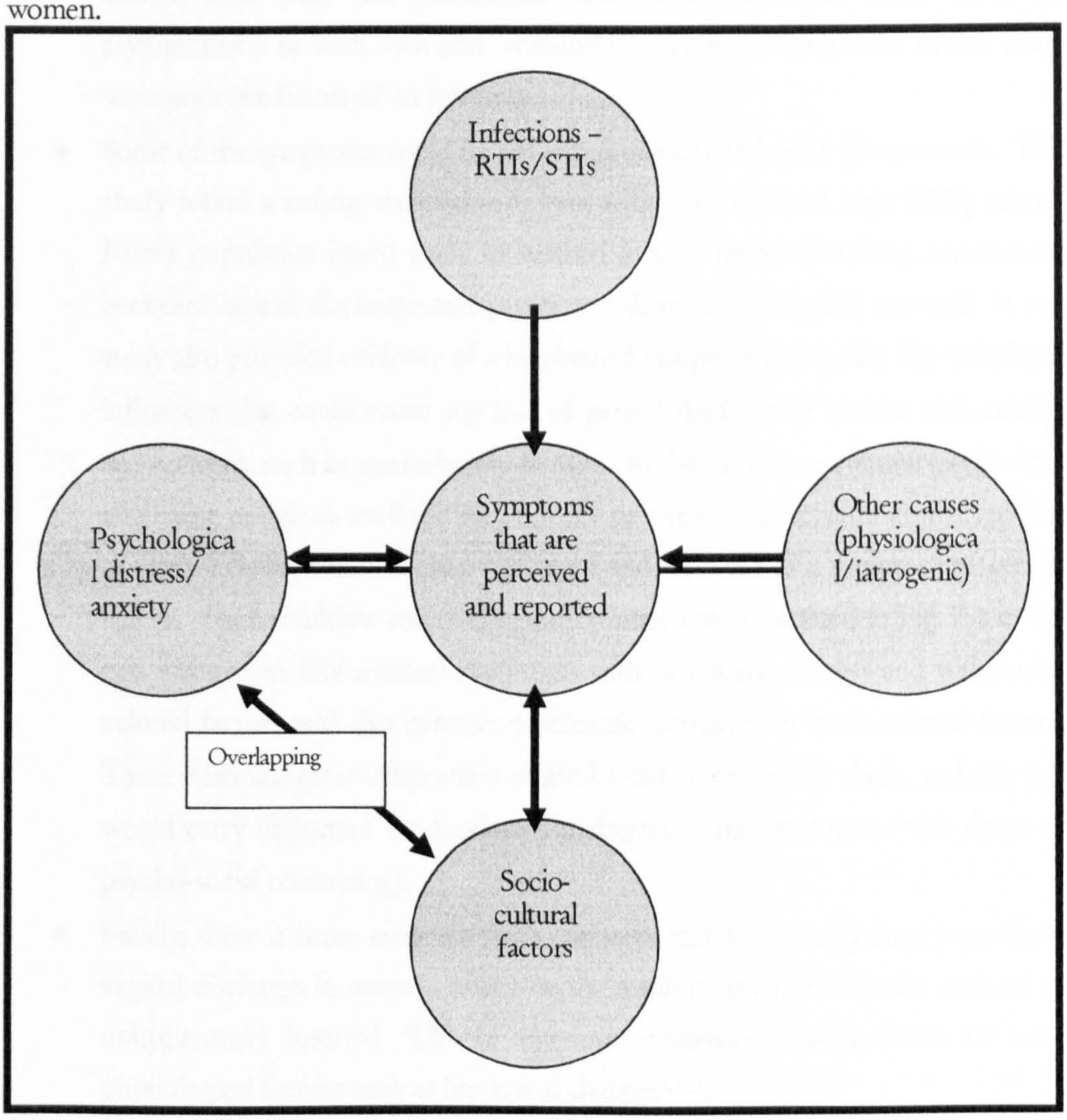


Figure 7.1 is a modification of the earlier conceptual framework (Fig. 2.2, Methods Chapter) that was used to examine the association between symptoms and infections and symptoms and GHQ caseness. In Figure 7.1, the direction of the arrows is changed to reflect the findings of this study, viewed in combination with the other body of evidence that exists in these areas. Thus, Figure 7.1. highlights the following associations in relation to the study population :

- Infections (RTIs/STIs) can cause symptoms, but do not always do so. It is known that STIs like Chlamydia and Gonorrhea can more often be asymptomatic in both men and women[88,179]. Thus the symptoms in this study were poor predictors of an infection.
- Some of the symptoms could be attributed to a psychological distress state. This study found a strong association between dhat in men and high GHQ scores. Patel's population based study of women in Goa reported striking associations between vaginal discharge and psychiatric distress[14]. People's accounts in our study also provided evidence of a heightened symptom perception due to cultural influences that could cause any loss of genital fluids to be viewed with anxiety and concern, such as masturbation in men. At the same time cultural factors may also cause people to attribute the presence of a state of psychiatric distress to loss of genital fluids, which is then perceived and reported as a symptom of genital illness. These multiple and overlapping relations are illustrated in Fig. 7.1 in the two way arrows that connect symptoms with psychiatric distress and with socio-cultural factors and also connect psychiatric distress with socio-cultural factors. These relationships overlap and it might be difficult to isolate them, and this fact would carry important implications for diagnosis and treatment (with drugs or psycho-social counseling).
- Finally, there is some evidence from literature that some symptoms, particularly vaginal discharge in women, might be the result of iatrogenic factors such as an unhygienically inserted IUD or previous obstetrical complications or even physiological factors such as hormonal changes[3,182].

Further research around reproductive tract morbidities in men and women could use this model to develop and test a research hypothesis related to causalities of genito-urinary symptoms.

Implications of findings related to reported morbidity

An important conclusion arising from this set of findings is that perceived morbidity can be quite different from reported morbidity which in turn is quite different from clinically diagnosed and medically explained morbidity. Medical anthropologists have highlighted this in their work in recent years[185,186]. Evidently then, a biomedical framework either by itself or limited to organic causes, is inadequate to understand reproductive morbidities in both men and women. The framework needs to be expanded and refined both outwards and inwards so that a) it becomes inclusive of psycho-social issues and psycho-sexual concerns, and b) the accuracy of the biomedical criteria to diagnose and treat RTIs/STIs improves. This has been discussed in additional detail later in this chapter under conclusions and recommendations (section 7.3).

7.2. Methodological Limitations

Small numbers of formally qualified providers

This study was concerned with all those rural private providers who had a clinic base, practiced medicine as an occupation and did not have an M.B.B.S qualification[15]. Among the providers that we surveyed, only around 10% were formally trained in an indigenous system of medicine, while the rest had unrecognized qualifications and 2 providers possessed no qualifications at all. The final sample of 60 providers included in the patient provider observations included only 7 recognized providers (the mapping survey had revealed a total of 14 recognized providers but 7 of these practiced in peri- urban locations of the rural blocks and were not included in the final sample). Thus, the small numerical size of recognized providers in the final sample had low power for a statistical comparison between the two types of providers in this study: recognized and unrecognized. Nonetheless, even with the small number of recognized providers, the differences that we obtained could be considered plausible as they did bring out the

[15] Bachelor of Medicine and Surgery - this is the graduate degree in modern medicine in India.

difference in their knowledge levels that were to be expected. This study, however, was more concerned with obtaining a wider picture of quality of care among all the practicing rural private providers, formal and informal, and in doing so it highlighted the overall inadequacies in the technical quality of care provided by all providers. The recognized providers performed a marginally greater number of technical procedures than the unrecognized, but it is important to note that their technical quality was also quite inadequate. None of them performed all of the required procedures consistently or dispensed all of the recommended drugs for RTIs/STIs. The overall quality of care scenario appeared similarly inadequate for both recognized and unrecognized providers and both would benefit from skills and knowledge improvement, based on their knowledge and abilities rather than qualifications alone.

Limitations of the observations

Observer effect or hawthorne effect.

In social sciences, the hawthorne effect commonly refers to a situation where human subjects being observed for a task might perform or behave better than they would normally do, as a result of the presence of an observer. In our study too, the presence of observers could have modified providers' normal and usual practices and behaviour. To check for such a bias, three key indicators of quality – average duration of interaction, average technical skills and average interpersonal skills were examined by rank order of observations from the first to the sixth. All 3 values to be found to be remarkably similar across the different sets of observations. It could be speculated that as providers' knowledge and skills with respect to syndromic management were not very high, their technical skills did not have much scope to change over the period of the observation. It is not clear how and why interpersonal skills and duration of interaction also showed such consistency across the observations. Nonetheless the author has mentioned earlier that the providers she personally observed often tended to leave long pauses between their questioning and jot down notes as they spoke to their patients. This she felt could perhaps be attributed to the effect of her presence and of providers' lack of comfort at

being observed, and a simultaneous desire to impress the observer, such as writing notes about patients. However, providers may not have felt similarly uncomfortable with the research team, all of whom were locally hired staff who blended in well into the region and had a good rapport with the study subjects.

The observation criteria

The observations of provider patient interactions used mainly structured criteria for observing and documenting providers' technical and interpersonal skills. This had both advantages and disadvantages. While using structured criteria provided a systematic approach to assessing providers' quality, they also restricted the assessments to only those criteria. It must be acknowledged that some ethnographic style data would have greatly enriched the content of this study by capturing the rapport between patients and providers and the finer nuances of the interaction.

However, the inclusion of providers' interpersonal skills did lend a more complete picture to the study of providers quality than has been noted in most other studies that have focused on providers' technical quality or on drug dispensing. The elements of interpersonal skills that were used were derived not from any standardized gold standard rating scale, but mainly from our qualitative data. This again holds both positive and negative methodological connotations. On the positive side, it enabled us to use those criteria that were most relevant to the providers in our study setting. Different combinations of such skills have also been noted elsewhere in the literature. WHO's 'responsiveness' criteria for health systems[63] and indicators of interpersonal competence suggested by other studies have categorized a range of providers' behaviors from establishing rapport, to sharing information, and providing appropriate closure[187,188]. So we can assume that we were on track. On the negative side, using these behaviors implied dealing with criteria that had not been validated before, and that were also open to subjective researcher biases. To reduce researchers' inter rater disagreements and to standardize observations, we trained the 11 field research staff once through classroom and field based activities at the start of the study. The most significant gains in

observations skills have been reported after the first training, with subsequent trainings indicating no further significant changes[150]. Instead of further training, the author and the study manager subsequently supervised the field observations to discuss and reconcile differences with researchers in their observations. Use of video recordings of providers (each followed by a discussion with the researchers) would have further strengthened the classroom training, but study resources did not permit video recordings.

Thus our interpersonal quality findings are based on subjective observations of researchers and we acknowledge limitations related to the reliability and validity of findings. The concentration of most of the observation ratings (of interpersonal behaviours) towards a middle score could well be one of the fall outs of the researchers' cautious scoring, and the differences in providers' interpersonal skills with respect to patients' gender might partially be a reflection of the observation biases of male and female researchers with female researchers scoring the providers higher on interpersonal skills than the male researchers. However, if this were so then all the various interpersonal skill elements would have received higher scores by female researchers. This did not happen and it was only in some specific skills that differences related to gender existed; these included friendliness, attentiveness and language use. These differences can also be quite easily explained by the fact that the providers would perceive the need to be more friendly and attentive and use appropriate language with the women patients, a majority of whom were illiterate, had limited exposure to the outside world and spoke the local dialects.

If our interpersonal skill findings had been required for a different purpose, then perhaps the reliability and validity issues would have held different connotations. It has been noted in the literature that a trade-off between reliability/validity and feasibility may be required depending on the context in which the assessments are being used[189]. For example if scores were to influence decisions about individual doctors (for say, a professional accreditation), then observer based ratings would need to be highly reliable so that individuals were not unfairly disadvantaged. Reliability could however be lower in

research contexts where individuals would not be directly affected by scores, such as in this study where the purpose was simply to obtain a general overview of performance.

Correctness of technical procedures performed

It is beyond the scope of this thesis to comment on how well or how correctly the providers performed some of the skills that they performed at all, such as a genital examination or risk assessment. There are reasons for this. At the beginning of the study the study collaborators agreed that the research staff who were not medically trained would not be well equipped to judge the appropriateness of medical procedures. So the staff were required to document if a procedure had happened at all and to note verbatim whatever had happened. As information related to quality issues was quite limited, it was thought that even a basic analysis of the procedures that providers performed at all would be quite useful in the larger body of literature realetd to rural providers. A different type of analysis would be needed for analyzing how well the procedures were conducted from the verbatim data, perhaps utilizing the Delphi technique of consulting a group of medical experts. The author might attempt this analysis later for a potential publication.

Limitations of interviews

Like the quality observations, the household interviews with men and women were also largely structured with only a few open ended questions. This research activity could have benefited from semi-structured, in-depth interviews. In fact as the purpose of this survey was not to establish health care seeking (it was not a large enough sample for that purpose) but rather to flesh out individual experiences with care seeking and constructs of quality, it might have sufficed to hold just 20 in-depth interviews. Doing so would have released more space in the exit interviews for more questions about patients' conditions, about family planning procedures used, parity, menstrual hygiene and possibly questions related to gender disadvantage in women, instead of asking several questions related to their past care seeking. The questions on past care seeking could have been limited to just one question about the very last source of care sought prior to coming to

that clinic. This would have also reduced any recall bias inherent in that question. However these limitations could not be considered to have affected the overall quality of the present research or have interfered in the study results in any significant way. Making these alterations would have improved the overall design of the research.

Limitations of the sample of care seekers

Our sample of clinic attendees was purposively selected as the focus of the study was on symptomatic care seekers with a pre-defined list of symptoms: genital discharge, ulcers, genital itching, burning micturition, lower abdominal pain, night fall in men, and bloody discharge in urine. The sample recruited using this criteria had a preponderance of women with vaginal discharge (192) and only 5 who did not report a discharge at all. This affected the analysis related to psychological distress and vaginal discharge in women and no conclusive findings could be obtained. In men on the other hand, the study could compare GHQ caseness in men who reported dhat with those who did not as the two comparable groups were available. The association between dhat and possible psychological distress was an important findings of this study. In relation to the women's data it can only be said that the study tried to draw a balance between its key objective, which was to examine quality of care for reproductive tract morbidities in care seeking men and women, and to explore as far as possible, the aetiologies behind the symptoms. In doing so it could obtain more findings with respect to men than women.

Lack of clinical confirmation of symptoms

The symptoms reported in this study were not clinically confirmed through an examination by the providers or researchers, as we did not want to interfere with providers' treatment. An examination is one of the mandatory steps in the management of urethral discharge in NACO's flowcharts, but not for vaginal discharge for which algorithms are provided for case management both with and without an examination (see Appendices 14-16 for flowcharts). It is unlikely that our findings could be significantly distorted by the lack of confirmation of the symptoms. A significant level of

concurrence ($p<0.01$) has been noted between self-reported symptoms and physician reported signs for vaginal discharge[85]. Grosskurth, et al (1996) reported the presence of a discharge in 58% men who reported discharge in a rural Tanzanian study[179]. We followed a calculated assumption that a majority of patients who reported the symptom would also show the presence of observable signs. The prevalence of STIs in the sample of men in our study was quite low and it is doubtful that the positive predictive values would have changed or increased significantly even if the number of symptomatic persons was limited to those with an observed sign only.

Limitations of the psychiatric assessments

We did not use a standardized psychiatric assessment tool to confirm a psychiatric diagnosis in subjects who had been screened using the GHQ (such as the revised Clinical Interview Schedule-CISR-used in Patel's study). Although this would have yielded valuable confirmatory data on the presence or absence of common mental disorders in the study population and identified those in clear need of psychiatric treatment, it also implied additional resources in terms of time, staff training and expertise in clinical psychiatric assessments. As the focus of our study was on quality issues, the available limited resources allowed only the use of the GHQ-12 to compare probability estimates of disorder within the population and not accurate prevalences of psychiatric disorder. Again this situation does not distort our findings in any way, rather it limits the extent to which we can present psychiatric distress as a definite aetiological explanation in some patients with reported genital discharge. Nonetheless, even our unconfirmed findings on the association between dhat and possible psychiatric distress in men, when viewed in conjunction with other findings and against the cultural background of the dhat syndrome in India, strongly indicate a need for further and more rigorous and focused research in this area.

7.3. Conclusions and recommendations: Public health programs and policies

Providers and users of health care in rural areas were the main focus of this study, and so the main findings of this study have been described with respect to these actors. Moving on to discuss the policy and programmatic implications of these findings, a multi-dimensional approach to quality of health care may be more fitting. One such multi-dimensional approach described by Maxwell[74] has been referred to in the Literature Review and the Methods chapters. This approach combines provider and user related perspectives of effectiveness, accessibility and acceptability of care with the larger public health governance issues of efficiency (cost effectiveness), equity and the population relevance of health care.

While earlier in this chapter, providers' quality was discussed in relation to Donabedian and Bruce's frameworks, the practical applications of this study are discussed in relation to a larger and more multi-dimensional framework. Thes are issues that the public health system must consider even if private providers are the main source of care.

7.3.1. Effectiveness and relevance of services

Effectiveness refers to technical effectiveness of treatment, based on sound evidence. Relevance refers to the overall pattern and balance of services in relation to the needs and wants of the population as a whole.

Epidemiological issues

A key issue related to both effectiveness and relevance is that of the evidence of local epidemiology of RTIs/STIs and of how social and cultural factors might interact and impact the appropriate management of these.

The epidemiological evidence presented in this study highlights the clinical and socio-cultural factors that could confound the diagnosis of RTIs/STIs using syndromic management alone, or in the form of the currently used algorithms. Perhaps the population prevalence levels need to reach a certain threshold before these algorithms can be used effectively and therefore the need for periodic surveillance of RTIs/STIs in all populations needs be stressed.

While calling for more accurate clinical diagnosis, the evidence in our study also suggests an expansion to the current framework of understanding reproductive morbidities in men and women from a psychosocial perspective. Reproductive health services need to be expanded to include patients' psychosexual concerns, related anxieties and underlying psychiatric distress. Men in particular displayed a need for good quality sexual health counseling that would help allay many of their concerns, fears, anxieties and misinformation related to their sexuality. In the absence of reliable services people might often fall prey to unscrupulous providers who might exploit their anxieties and ignorance.

Secondly the findings call for a review of the diagnosis and treatment of RTIs/STIs using the currently available syndromic management protocols. As the prevalence of CT and NG was low in this setting (1-3%), and bacterial vaginosis was the most prevalent infection found in 20% women, using syndromic management would lead to considerable over treatment in both men and women here. In such situations WHO has recommended that women who present with a vaginal discharge be treated presumptively only for bacterial vaginosis with Metronidazole therapy[105]. Even this would still lead to considerable over treatment in the present study setting, well over 70% among the women. Rapid diagnostic tests[190] can serve as a boon for such settings, but it is uncertain when these tests are likely to become available and even then, whether they will be feasible and affordable among these populations.

The current scenario might benefit from other realistic and innovative solutions. A recent modeling exercise[191] demonstrated that even sub-optimal tests can have immense public health value by 'reducing the delay between testing and treatment, which would

result in as many STIs being averted as if the gold standard STI test had been used'. In our study setting, a realistic and timely option might be to introduce and evaluate the effectiveness of introducing simple screening steps such as a pH paper test (pH>4.6) in the algorithms to indicate bacterial vaginosis in women complaining of a vaginal discharge. West et al[192], in their evaluation of the effectiveness of the FemExam test for bacterial vaginosis reported that use of even one of the two test Cards (Card 1 – based on a pH and an amine test) correctly detected and treated around 70% of the women. The same study also compared pH testing in Card 1 against pH testing for Amsel criteria using another pH paper and found that the paper detected more positive results than the test card-1 (although specificity was lower). In our type of study setting, where lab diagnostics are not available and where presumptive treatment for BV would lead to substantial over-treatment, even a simple and cheap option like pH paper, even though sub-optimal, may be of great value in lowering the current levels of over treatment in an affordable way. Although at the time of writing this thesis it is difficult to provide exact costs of these screening procedures in the district, we can nevertheless assume that these would be well within the existing treatment charges that patients were incurring per visit, especially as providers' treatment charges typically included a week's dose of drugs.

A sub-group (of symptomatic women) would then need to be identified for cervical infections. Combinations of approaches including, for example, scores on various specific risk factors, signs of PID and polymorph count[193] need to be reviewed and evaluated locally to identify the most sensitive and specific combinations.

For men, WHO recommends that in case of a demonstrable discharge on clinical exam, presumptive management for NG and CT should be implemented. In our study setting this approach might lead to over treatment in symptomatic men or exclude NG/CT in those men in whom no discharge may be immediately visible but who might nevertheless be infected. Again, the introduction of a simple screening step such as a Leucocyte Esterase Dipstick (LED) test[194], possibly in combination with a set of signs/symptoms and specific risk factors such as number of partner in the last 3 months (personal communication with Philippe Mayaud, Senior Lecturer, LSHTM, based on unpublished

data from Mwanza study prior to 1997) might offer the potential to improve diagnosis in men. As a next step, this study suggests that combinations of different approaches including signs/symptoms, specific risk factors and simple screening tools (e.g. pH paper, LED tests) need to be reviewed and evaluated for their effectiveness in diagnosing and treating RTIs/STIs in both men and women in the current study setting.

While it is important to revise and evaluate management guidelines for genito-urinary symptoms, the fact that the prevalence of STIs was low in this population suggests a need to identify other priority clinical conditions in the region, TB for example, which might need more urgent intervention through the private providers. This would be important from a point of view of population relevance. At the same time, good prevention education and health promotion with rural communities can assure that the current low levels of infections are maintained.

Issues related to providers and their technical quality

Currently, government policies do not recognize providers without a formal qualification. However these form the majority of providers in rural areas and are evidently an essential rung of the health system. They also exhibited varying knowledge levels , with some displaying greater knowledge than the others. It is therefore urgent to work through them in all possible ways, to meet the health needs of the populations they serve. First of all, local private providers in rural areas, especially in scattered and remote villages, should be identified and trained in the provision of basic and emergency health care as they are the first point of management for a variety of illnesses and they are available at all times. The deficiencies in providers' management of RTIs/STIs found in this study could well reflect more general quality of care deficiencies in management of other diseases, that are likely to be more prevalent in the study areas than RTIs/STIs were. Any quality improvement strategies will also need to establish strong linkages between rural providers and referral facilities, public or private.

Knowledge is definitely one of the key components that needs to be strengthened in the rural providers in order to improve their technical skills in delivering care for RTIs/STIs (and perhaps in other areas as well). This study found that providers' technical quality was associated with qualifications and with medium levels of knowledge. Providers' drug dispensing on the other hand is more likely to be influenced by monetary and other factors and would need to be approached differently, but the technical procedures that they performed were not so dependent on the treatment charges. Thus it may be possible to substantially improve the procedures that providers currently perform by improving their knowledge, while their drug dispensing will need to be regulated and rationalized in other ways.

As currently government policies do not recognize the legitimacy of providers without a formal qualification, it is likely that policymakers would prefer to develop performance indicators only for the qualified providers to start with. However, even among the informally qualified providers we found that some had better knowledge levels than the rest, just as among the formally qualified ones. Development of standard treatment guidelines must factor provider knowledge as informal providers with higher knowledge levels may exhibit similar potential as the formally qualified ones in practicing standard evidence based guidelines, once they are trained in these. It was clear in our study and from many others too, that in rural areas there are few qualified providers of any type available. It is necessary to make the best use of all available providers and rather than lumping them together as a group of uniformly poor quality providers, health authorities could make finer distinctions between providers' abilities and discuss and develop ways of optimizing the services of the different types, according to their skills and abilities rather than their qualifications alone.

For health policymakers, the most controversial aspect about informal providers relates to their drug dispensing, but it is unlikely that this can or should be banned altogether. Health authorities need to consider more practical ways of rationalizing drugs dispensed by rural providers, and it has been suggested that one way to rationalize drug use might be to develop and allow different lists of essential drugs to be dispensed[195], supplemented

with focused behaviour change communication with communities on rational drug use . A useful first step towards this might be to discuss the issue first with providers and the communities they serve to obtain their thoughts and ideas and most importantly their cooperation.

7.3.2. Acceptability and access of services

Acceptability refers to the humanness of care and what the patient thinks of it. Access refers to how easily people can access care when they need it and if there are any barriers.

Overall the private providers in this study did very well on issues of access and acceptability. Their interpersonal skills and their easy access were their greatest strength in the rural areas.

Female providers – a critical need

It must be noted that a majority of the providers were men and that might act as a significant barrier for women seeking care. Although we did find more women than men seeking care at these provider clinics, the women's accounts in the FGDs reflected an enormous preoocupation and need for female providers. Female providers were a constantly recurring theme in the women's narratives. Not only in the private sector but in the public sector too we found an acute dearth of women doctors. The health administration does employ female nurses called the Auxiliary Nurse Midwife but these are not adequate in numbers for the difficult terrain with scattered villages. In one village we found a husband wife couple employed by an NGO. The wife was sought after and immensely popular with the local population. District health authorities as well as civic society must consider ways of increasing the numbers of trained female providers with technical skills in delivery of basic health care.

More female providers are needed in rural areas to meet the health needs of women and adolescent girls. The more educated young women in rural communities could be

encouraged to undergo para-professional courses or shorter vocational medical courses, and be equipped to provide a basic range of RCH services. These providers must be well linked with secondary and tertiary referral facilities.

Needed-efficient referral pathways

This study found that there were no strong and efficient referral pathways and people moved from provider to provider and from place to place on the basis of random advice, often a high costs to themselves. There is a need to develop strong referral linkages between primary and tertiary healthcare facilities, both private and public and also make use of modern technology, like telemedicine, that might save traveling costs for people living in far flung rural areas with limited transport facilities. People in rural areas need to travel far to seek treatment for major diseases and for surgical procedures, even simple procedures like X rays and laboratory tests. In geographically difficult terrains particularly, there is a need to bring such services closer to the people, possibly by strengthening and better equipping the public sector primary health care centres.

Making public health facilities friendlier and accountable to the people

Providers' interpersonal skills were extremely important to people. They talked about these at great length. They held up interpersonal issues as one of key drawbacks of the public sector and appeared helpless about not being able to exert the same kind of accountability as they could with the private sector providers. Public facilities' hours were also not well suited to local communities' requirements.

For the public sector to gain access and acceptability into people's minds it will need to improve significantly the interpersonal aspects of their care and review the timing of health facilities.

Needed –doctors of basic services in rural areas

Evidence of the last few decades strongly suggests that the existing medical profession, in the way that it is currently designed, has not been able to meet the public health needs of rural India, either in terms of the numbers of available qualified providers or their perceived quality in the eyes of the people. On the other hand, time and again, studies in rural areas have confirmed that the largest proportion of providers are those who do not have a formal professional qualification. Evidently there is a thriving rural health market that has constantly invited new entrants in the field, even though they may lack professional qualifications in medicine. In India, education in western medicine is provided by superior medical institutions which are largely geared towards educating a medical elite from middle and upper income families with a background of 'English medium' schooling. Without undermining the utmost significance of such institutions and of the medical graduates that they develop, it must be emphasized that these have not been able to spread the fruits of medicine among all those who need it. There is a strong need in rural areas for well trained providers of basic services. Perhaps such training could be delivered through courses of shorter duration, leading to a diploma rather than a certificate of medical practice. The better educated youth in rural communities, both boys and girls could be encouraged to attend such vocational courses and set up practices in rural areas. Many other issues related to monitoring and regulation of services would need to be worked out. However this thesis is not equipped to go into those details, and confines itself to making a strong recommendation for adapting the current medical profession to meet the needs of the people, particularly in rural areas.

Needed- expansion and contextualization of sexual health services

Available health services that provide treatment for RTIs/STIs such as STD clinics and reproductive health camps should be expanded to provide psychosexual services as well. This study found that men especially are in great need of good quality sexual health

services that can mitigate their anxieties and misconceptions related to their sexual health and performance.

The study also revealed that people did not see a clear link between discrete symptoms such as a genital discharge, and infections- particularly sexually transmitted ones. Diseases were commonly viewed as discrete symptoms with local terms. Local interventions such as camp approaches therefore need to use local terminology to attract clients for screening and treatment.

7.3.3. Equity and efficiency of services

Equity refers to the fairness of treatment received by a group of patients in comparison to others. Efficiency refers to the cost effeciveness of treatment and whether a good balance was achieved between input costs and outputs or vice versa.

Although a precise analysis of these issues was not carried out in this thesis, there are larger issues of equity and efficiency relevant to rural populations in India and their health needs. The majority of the poor in India lack any form of social insurance including health insurance and this exists as a significant, inequitable and unacceptable divide between the country's rich and poor.

People in our study paid large amounts for the treatment of their genito-urinary ailments. These were not catastrophic conditions but a majority of the people paid rupees 51-100. Many of them had also sought care in the past for the same condition. This private expenditure, made in times of illness related vulnerability, needs to be utilized in an efficient manner to protect the poor against illness related shocks and also to ensure good quality care for them. These communities would benefit greatly from health insurance. (Providers commonly gave credit facilities and this is an existing mechanism of post payments that could be explored further).

7.4. Improving providers' quality of care

Professional development strategies

The findings of this study suggest that a certain optimum level of knowledge is required for practicing required skills. This being the case, knowledge improvements would be one of the foremost inputs needed to improve technical skills for both recognized and unrecognized providers, based on basic treatment guidelines appropriate for their abilities rather than qualifications. Providers charged a substantial fees and they also spent sufficient time with each patient (10-15 minutes) during which they could easily perform all the required case management steps if they were trained in performing those steps. Interventions that sensitively address providers attitudes would also be needed to assure that providers perform with similar technical acumen across all of their patients, irrespective of gender or marital status.

With respect to better management of genito-urinary conditions, providers' training must address their own attitudinal biases and gender differentials in performance. Providers need tactful and sensitive attitudinal training to help them come to terms with their own inhibitions, biases and beliefs and be better able to handle delicate subjects like sexual matters. They may also need a lot of capacity building to approach sensitive issues with women, but with their existing levels of interpersonal skills, especially with women, they could easily be strengthened in areas such as counseling women for condom use and for disease prevention.

In this study, providers' key strengths lay in taking an illness history, in their language use and in their rapport with the patients, particularly with women. With greater knowledge inputs, these providers could be strengthened in taking good case histories, especially for RH issues. With their good rapport and understanding of local language and customs, they could also be trained to do a basic psychological assessment and provide psychosocial counseling. Their drug dispensing however, needs to be regulated and rationalized.

Sustaining providers' adherence to minimum standards

A key issue related to quality assurance is that of providers' adherence to minimum standards of care. There are few instances of interventions related to qualiy assurance strategies that have been tried out on a large scale with informal rural providers, the Janani franchising model[196] being one significant example, although limited primarily to contraceptive services. By comparison, there is more evidence on strategies for engaging the formal private sector and few reviews of these[197,198] indicate that multifaceted strategies are likely to have more successful outcomes for improving provider quality than those that focus on provider knowledge alone. These diverse strategies might include regulating[199], contracting[200] and various types of franchising[201] or accreditation strategies[202] that include elements of consumer education and provider monitoring and incentives. Needless to say, each of these also carries its own limitations, inherent or context specific, which will need to be negotiated and adapted to any rural setting of informal providers.

Rational drug use

Of critical importance would be interventions to reduce and rationalize drug dispensing by the providers, and it is known that knowledge interventions alone cannot achieve that[197]. Interventions that have had some success in rationalizing drug use in developing countries include developing of standard treatment guidelines, drawing up essential drugs lists appropriate for different levels of facilities/providers, professional training and targeted in-service training of health providers[195,203]. These need to be closely supplemented with demand side interventions such as community education. Community based educational interventions recommend strong and consistent behaviour change interventions that make use of appropriate and effective technology and the mass media, rather than those that are limited to just passive provision of basic information[204].

Collaborative development of quality improvement strategies

It has been recommended that interventions are most likely to succeed if they are developed in a collaborative way, with full participation and acceptance of all the stakeholders[205]. In the present set up this would include not only health policy makers and implementors but also providers and communities. Thus some suggested next steps in engaging with providers in this setting might be for a core group with public and civil society representatives to review in greater depth the available evidence on different types of interventions, and on contextual factors such as local burden of disease, and to collaboratively develop acceptable treatment guidelines for different types of providers, based on their knowledge and abilities rather than qualifications alone, and accompanied by a collaborative identification of mechanisms that will encourage providers to assimilate and adhere to these guidelines on a sustainable basis. A small project could be implemented on a pilot scale to start with, with combined NGO-public sector participation.

7.5. Community focused strategies

This study found a large amount of medically unexplained morbidity among men and women who sought care at rural provider clinics. Some of this illness reporting could be attributed to cultural influences, for example, men's concern related to semen loss through masturbation and nocturnal emissions. These were rural, traditional and poor communities with a high level of female illiteracy and a great deal of reliance on other community members for all types of illness information and for making decisions related to care seeking. For adolescents, reproductive health related communication was restricted at home and occurred only with peers in schools. However there was also evidence that communities were exposed to and relied a great deal upon messages heard and seen on mass media such as television. All IEC strategies must include television as a significant medium of information communication.

IEC on reproductive health and on allaying culturally influenced anxieties

Communities would benefit from greater and more accurate information and education on reproductive health issues that might gradually help counter cultural influences, and reduce the burden of symptom over reporting and the associated high costs of irrational care seeking. It is equally important to reduce communities', especially men's anxieties related to semen loss and to masturbation. Similar to the findings and recommendations of two other significant studies in India[79,165], this study also advocates that semen loss concerns and concerns around masturbation in men should be recognized as a health problem and health campaigns need to allay these concerns.

Education on sexual and reproductive health would equip communities with a better and more accurate understanding of symptom recognition, the range of etiologies, of the links between some of the commonly occurring symptoms and sexually transmitted infections, of the harmful consequences of STIs and of simple prevention strategies.

As the prevalence of sexually transmitted infections was found to be low in these communities, prevention education can help to maintain the low levels. Such information is urgently needed for adolescents and must be institutionalized in schools as early as possible. This will slowly make the next generation more aware of and better prepared to understand their sexual and reproductive health needs. For adults, continuous education strategies could be worked out with the help of NGOs, adult education centres, women's groups and so on.

IEC related to medicines and quality of care

Communities also need focused behaviour change communication to alter existing patterns of irrational drug use. This study found that efficacy of medicine was a key indicator of a provider's technical competence and people looked for quick and cheap cures when they sought treatment. This was their observable measure of a provider's technical competence. The drug industry has made rapid inroads into these rural

communities but information related to appropriate dosages and side effects and what should really constitute effective medicine, is missing. It is crucial to initiate simple and effective consumer education strategies related to modern biomedicines in order to rationalize their use and consumers' perceptions in rural areas. This may also have the potential to change providers' dispensing behaviour.

People were found to use observable - though arbitrary – indicators of quality and did not judge providers' technical competence by their qualifications. It would be helpful to develop and disseminate, using effective strategies, some standardized and easy indicators that people can use to better discriminate providers' technical quality (rather than relying solely on efficacy of medicine). These could probably be developed as part of a larger strategy to improve providers' performance and bring it in line with prescribed quality indicators. Social franchising models have used such techniques to advertise and position networks of practitioners offering a standard acceptable set of services under a shared brand[201]. However this can be quite resource intensive and requires extreme clarity of the services and the quality indicators that are offered to the public using highly focused multi-media campaigns that are targeted towards behaviour change rather just a passive provision of information[204].

7.6. Conclusions and recommendations: further research

Our study identified research issues related to the diagnosis and treatment of genito-urinary symptoms in men and women. Empirical research is needed to better understand the associations between reported vaginal discharge in women care seekers and the various possible aetiological factors that may be involved: psychological, physiological (e.g. hormonal and seasonal) and pathological (e.g. past obstetric history and surgical or invasive family planning procedures, urinary infections etc besides RTIs/STIs).

Research is also needed to develop and evaluate the most effective combinations of approaches or algorithms for diagnosing and treating RTIs/STIs in men and women.

Such approaches could ideally combine sets of signs/symptoms with the most statistically significant risk factor/s and a simple screening step such as pH paper for women and leucocyte esterase dipstick (LED) tests for men. Although not 100% accurate, these realistic approaches are urgently needed to improve the diagnostic abilities of currently available protocols, without waiting for the more superior rapid diagnostic tests to become available.

This study also recommends knowledge and skill improvement for private rural providers, together with a shift in their attitudes so that they are better able to understand, diagnose and treat, using acceptable guidelines, the complex problems of reproductive morbidities. They could be strengthened to either provide acceptable and appropriate care or more referrals, together with better advise on prevention of STIs, particularly counseling for condom use for safer sex. One of the first steps needed in this task is to improve their knowledge levels, followed by other types of interventions to sustain the improvements. The body that takes on this task will need to develop a strategy based on the findings of this and other studies and pilot the strategy using rigorous research criteria. It has been suggested earlier that this could be a combined government-civil society enterprise.

The research needs for this setting cannot be limited only to sexual health and provision of better sexual health services. Communities who participated in this study were under served and under researched. Much more information is needed about the larger health needs of these communities and prevalence of other diseases here, including problems of mental health, so that resources are adequately invested in meeting these needs. To a great extent these study communtities also reflect the needs of the vast numbers of rural poor in India, who still remain voiceless and invisible inspite of being the bulk of the country's population. In the face of India's growing economic power and wealth, the neglect suffered by its poor rural populations is indeed a dishonour to the country.

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APPENDICES

APPENDIX 1 - MAP OF INDIA SHOWING UTTARANCHAL STATE

APPENDIX 2 - GUIDELINES FOR CONDUCTING THE FREE-LISTING

Purpose:

- To prepare a list of commonly occurring symptoms of RTIs/STIs, obtain their local terms and

- Explore subtle differences between the different terms if any

- Explore perceived causes behind the different symptoms as expressed in local terminology

Respondents (who will be interviewed for the free listing):

- A minimum of 12 rural men and12 rural women (aged 15-49)
- 12 village level providers
- The men and women do not have to be patients of an RTI/STI. They can be found and interviewed anywhere – at a village practitioner's clinic, a PHC or in a market place, a roadside tea shop etc.
- Interview people and providers in different parts of the district to get a good representation of symptoms, local terminology and perceived causes. More than 12 can also be interviewed.

Method of conducting the free-listing:

1. Once you have found someone you would like to interview, first of all establish rapport and make him/her feel comfortable. You could start by explaining to him/her who you are, where you have come from, the purpose of this study, what you will be doing with the respondent and that the information will be kept confidential. Use the explanation given below in bold (Hindi version is in Italics) to obtain the respondent's agreement or consent to be interviewed. PLEASE MAKE SURE THAT YOU OBTAIN THE RESPONDENT'S CONSENT FOR THE INTERVIEW BEFORE PROCEEDING.

'Hello, my name is ... .and I have come from a health NGO in Agra/Christian Hospital at Chamba. We are collecting information on health problems of men and women with the purpose of improving the treatment that they get at the first point of care-seeking. We are especially interested in problems associated with the private parts, how these are perceived, and the different kinds of words and language people here use to describe these problems.

I want to ask for your consent to talk to you for about 15 minutes. If you agree I will ask to think of a few symptoms of problems that men/women may have in their private parts and how they refer to these. We need this basic understanding before we can gather more information on how people seek care for these problems and what kind of care they obtain.

Everything you discuss with us will be confidential and we will not put any names or other information that could identify you on any of our records or reports.

Please feel free to agree or disagree to participate. If you do not agree you will not experience any disadvantages.

No one will charge you any money to participate or pay you any money if you do. You can withdraw from the discussion at any time.

If you have any questions, you may ask me at any time, or call Dr. Deokinandan at 0562 215 11 /Dr. Rajesh Singh at 01375 55273 at Christian Hospital, Chamba.'

IN HINDI:

Namaskar, mera nam... ... ... .hai aur mainAgra ki ek swayam sevi sanstha/masihi aspatal, chamba se aya /ayiee hoon. Hum purushon aur mahilayon ki swasthya samasyaon ke bare mein jankari ikaththi kar rahe hain jisse hum swasthya sevayon ko aur achcha bana saken. Hum khastaur se un samasyon ke bare mein jankari prapt kar rahe hain jo prajanan angon se judi hain aur jinke bare mein bat karte huay log sankoch karte hain. Hum yeh bhi janna chahte hain ke in samasyaon ko yahan par kis tarah dekha samjha jata hai, aur yahan ki bhasha mein inhe kya kehte hain.

Hum apse 15 minit bat karne ke liye apki anumati chahte hain. Agar aap razi hain to hum apse prajanan angon se judi samasyaon aur unke lakshanon ke bare mein batchit karenge. Is se pehle ki hum swasthya sevayon ki jankari prapt karen, hamein samasyaon ke bare mein janna zaroori hai.

Apki aur hamari batchit gupt rakhi jayegi aur aapke nam ki pahchan hum aapse mili jankari ke sath nahin jodenge.

Apko poori azadi hai ki aap hamare sath bat karen ya na karen. Iske liye ap se kuch liya diya nahin jayega. Bat na karne par bhi aap ko koi nuksan nahin hoga. Ap kisi bhi samay batchit karne se inkar kar sakte hain.

Agar aap kuch poochna chahte hain to aap hum se pooch sakte hain ya phir phone kar sakte hain Dr. Deoki Nandan ko 0562 – 215111 par / Dr. Rajesh Singh ko 01376 – 55273 par.

2. Once consent is obtained, proceed with the interview as described on the next page. Please have your note pad/ daily diary ready, along with a pen to write down the answers.

INTERVIEW TO OBTAIN A FREE LISTING OF SYMPTOMS OF RTIs/STIs

Note for the interviewers:

MALE interviewers will interview MALE respondents about diseases found in MEN, and FEMALE interviewers will interview FEMALE respondents about diseases found in WOMEN.

Questions:

1. What illnesses are generally faced by men/women in your area?
   Possible ways to ask this in Hindi: Aapke ilake mein purushon/mahilayon mein kon kon si beemariyan payiee jati hain?

(Note for the interviewers: Male interviewers to ask about men's diseases, and female interviewers to ask about women's diseases only. PLEASE DO NOT MIX THE TWO! Record the illnesses in the same order as given by the respondents. Verbatim recording of the answer is not required)

2. Can you think of any problems of the genital organs that men/women in your area may suffer from?... .Any others you can think of... .... .any others?? Probe for an exhaustive list of problems

   Possible ways to ask this in Hindi: *Kuch bimariyan aisi bhi hoti hain jo khas purushon/mahilayon mein paiyee jati hain, jo prajanan angon se judi hoti hain aur jinke bare mein purush/mahilayein bat karne mein sankoch karte hain. Aisi kaun si beemariyan yahan par purushon/mahilayon mein hoti hain?*

(Note for the interviewers: Again ask separately from men and women respondents about male and female problems.

Answers will likely include some symptoms like safed pani, khujlee, ghav etc. Write these in your notebooks in the same order as the respondent names them.)

For each problem named by the respondent, ask:

3. What is this problem called in the local language here... .any other terms... any terms specific to a certain area?? Probe for as many local terms as possible for each symptom. Write them down as they are expressed by the respondent.
Possible ways to ask this in Hindi

Ise yahan ki bhasha mein kya kahte hain?... aur bhi koi nam hain??... ..aur koi... shayad kisi khas ilake mein log koi aur khas shabd prayog karte hon??

(Note for the interviewers:

For each symptom, obtain a number of local terms, e.g, for white discharge may obtain terms like dhat, swapndosh, pairwa, etc. Next, explore the similarities and distinctions between these symptoms. For example, dhat, swapndosh and pairwah may all present as a discharge, but there may be differences in their perceived etiology (causes) or in the type of discharge (one could be thin and running, another could be thick and semen like, while yet another may be curd like and foul smelling).

So probe for any differences in the different terms that are used to describe the same sub-group of symptoms. Probe for differences in types as well as in perceived causes behind different types of the same sub-group of symptoms.

So, if the respondent says that white discharge is called dhat and swapndosh, ask:

4. How is dhat different from swapndosh? Any difference in the way it presents itself? Any difference in the causes behind the two types of discharge?
Possible ways to ask this in Hindi:

Dhat aur swapndosh mein kya antar hai?

Dhat aur swapndosh mein jis tarah ka pani girta hai, kya usme koi antar hai?

Dhat girne ke kya kya karan hote hain? Swapndosh ke kya kya karan hote hain?

5. If, as a response to Q.2, the respondent names a group of symptoms such as garmi ki beemari or phirangi rog, ask what these mean? What are the specific symptoms of each and what are the likely causes of the illness, e.i how is the illness transmitted?

Possible ways to ask this in Hindi:

Aapne pehle ek aur beemari ka jikre kiya tha- garmi ki beemari. Iske kya lakshan hote hain?

Is beemari ke kya karan hote hain... yeh kis tarah se phailti hai?

APPENDIX 3 - FOCUS GROUP DISCUSSION GUIDE

1. What are some of the actions taken by family members when someone falls sick at home?

- What do they do first?
- Who do they seek treatment from first? (Explore what type of doctor)
- When? After how many days of the illness?
- Is treatment sought first from here for all illnesses?
- Any differences in the way men & women/boys & girls are treated?

2. Why do people generally go to this provider first? What are some of the good things about this provider... things that are liked by everyone... that are important reasons why you go to him? What are some of the things that you do not like about this provider?

3. What are the other options that you have here for health seeking? Why do you not go there first? What are some of the things here that are not as good as your first option?

4. What would people here do if they developed problems of the genital organs such as white discharge/dhat, ulcers, burning micturition and backache etc.

- What will they do first?
- Where will they seek treatment from first? Why? Good things? Not good?
- When? After how many days of the illness?
- If they do not get better here, then what will they do?
- Any difference in care seeking by men and women?

5. In your opinion what are some of the good things that a good quality doctor should have? And what should be some of the good things about a doctor from whom people would like to seek treatment for problems like white discharge, genital ulcers, burning micturition etc.?

HINDI

1. Jab ghar mein koi bimar padta hai to gharvale kya karte hain?

-sabse pehle kya karte hain
-bahar pehle kise dikhate hain? (kis tarah ka doctor ..pata keejiye)
-kab, bimari ke kitne samay baad dikhate hain?
-kya sabhi bimariyon ke liye pehle yahin dikhate hain?
-maa/baap/beta/beti/pati/patni, kya sabhi ke saath ek sa vyavhar hota hai, bimar padne par?

2. Jise dikhate hain, use kyon dikhate hain? Yahan ke bare mein kya achchi batein hain... jo yahan sabhi ko achchi lagti hain... .jiski vajah se yahan sab log jana pasand karte hain.

3. Aur kahan kahan dikha sakte hain? Yahan pehle jana log kyon nahin pasand karte? Yahan ki kon si batein pehle chikitsak ki apeksha utni sahi nahin lagti logon ko.

4. Agar kisi ko nichle angon ki koi samsya ho jaye, jaise ki safed pani ya dhat ki shikayat, ling ya yoni par ghav, peshab mein jalan ityadi, to ve kya kartein hain?

-sabse pehle kya kartein hain?
-bahar pehle kise dikhate hain? (kis tarah ka doctor ..pata keejiye)
-yahan kyon dikhate hain? Achchayiyan ? Kamiyan?
-kab, bimari ke kitne samay baad dikhate hain?
-agar theek na huye to kya karenge?
-kya sabhi ke saath ek sa vyavhar hota hai bimar padne par?

5. Aapke vichar mein ek achche doctor mein kya kya gun ya achchi batein honi chahiye? Khas taur se ek aise doctor mein jiske paas log safed pani, dhat, peshab mein jalan jaisi shikayaton ke liye jana pasand karenge?

APPENDIX 4 – PROVIDER MAPPING QUESTIONNAIRE

Name of interviewer **Interviewer ka naam**	
Name of person checking this form **Form check karne vale ka naam**	
Date of conducting interview **Interview ki tarikh**	☐☐ Day ☐☐ Mth ☐☐ Yr.
Time interview started **Interview shuru hone ka samay**	☐☐ ☐☐
Time interview ended **Interview samapt hone ka samay**	☐☐ ☐☐

SECTION 1: BASIC DATA

1.1. What is your name? **A a p k a n a a m k y a h a i ?**	
1.2. Sex of the practitioner (to be observed and noted) **Chikitsak ka ling** 1=male 2=female	☐
1.3. Approximately how old are you? **Aapki umar lagbhag kya hogi?**	☐☐ Yrs.
1.4. Where is your native place? **Aap kahan ke rehne vale hain?**	
1.5. What is the name of this village/place where the clinic is located? **Is gaon/jagah ka naam kya hai jahan clinic sthit hai?**	
1.6. Name of block (to be noted by the respondent from other observations) 1= 2= 3= 4= 5= 6=	☐
1.7. Any landmark to identify location of clinic (to be noted by the interviewer from personal observation, NOT to be asked) **Clinic jahan sthit hai us jagah ka koi pahchan chinh (Interviewer dekh kar likhen, poochkar nahin)**	
1.8. What are the clinic timings? **Aapka Clinic kab se kab tak khulta hai?**	☐☐ a.m to ☐☐ p.m. ☐☐ a.m. to ☐☐ p.m.
1.9. How many years have you been practicing in this location? **Is jagah par aap kitne salon se practice kar rahe hain?**	☐☐ Yrs.

1.10. Do you also practice in some other clinic? **Kya aap kisi aur clinic par bhi baithte hain?** 1 = Yes (han) 2 = No (nahin)	☐
1.11. If yes, please tell us the location of the clinic **Agar han, to doosre clinic ka sthan bataiye**	
1.12. What are your days and timings at the other clinic? **Aap doosre clinic mein kis din aur kis samay baithte hain?** 1 = 1 day a week (*saptah mein ek baar*) 2 = 2 days a week (*saptah mein do bar* 3 = 3 days a week (*saptah mein teen bar*) 4 = any other - please specify (*anya - spasht karein*)	Day/din ☐ Timing/samay ☐☐ a.m. to ☐☐ p.m. ☐☐ a.m. to ☐☐ p.m.
1.13. Do you have any other occupation apart from your practice? **Practice ke alava bhi aap koi aur kaam karte hain?** 1 = yes (han) 2 = No (nahin)	☐
1.14. If yes, what? **Agar han to kya?**	

SECTION 2: PATIENT INFORMATION

2.1. What are the three to five most common complaints that patients come to you to seek treatment for? (If the practitioner can name five, note all, otherwise press for at least three) **Sabse zyada kaun si bimariyon ki shikayat lekar mareez aapke paas aate hain? 3 se 5 aisi mukhya bimariyan bataiye.** 1 = fever (*bukhar*); 2 = nausea& diarrhea (*ulti-dast*) 3 =cough&cold (*zukam& kharsi*); 4 =skin disease (*cherm rog*); 5 =Animal/insect bite (*janwar/kide ka kata*); 6 =Itching (*khaj*); 7 = Boils& blisters (*dane/phode-phunsi*); 8 =white discharge (*safed paani*); 9 =Burning micturition (*peshab mein jalan*); 10 =wound/injury(*chot*); 11 =respiratory problem(*saans ki nali ki biman*); 12 =backache (*kamar dard*); 13 = any other-specify	☐ ☐ ☐ ☐ ☐
2.3. Between men and women patients, who do you see more? **Aapke paas mahila rogi ya purush rogi, kaun zyada aate hain?**	☐

1=men (*purush*); 2=women (*mahila*); 3= both approx. equal (*dono barabar sankhya mein aate hain*)	
2.4. Between children, adults and old people, who do you see more? **Aapke paas bachche, jawan ya boode, kaun zyada aate hain?** 1=children (*bachche*); 2= adults (*jawan*); 3= old (*boode*); 4= approx. equal (*sabhi barabar sankhya mein*); 5= any other –specify (anya – spasht karen)	☐
2.5. We would like to know how many patients you saw on average, daily in the last week. If you have records, please refer to these. **Austan roop se, pichle saptah aapne rozana kitne mareez dekhe? Agar mareezon ke record hain, to unhe dekh kar bataiye.** 1=2-4; 2=5-8; 3=9-12; 4=13-15; 5=16-20; 6=21-25; 7=more than 26 (*26 se zyada*)	☐
2.6. Please tell us names of five most common villages from where your patients come? **Aamtor par kaun kaun se gaon ke log aapke paas ilaj ke liye aate hain? 5 mukhya gaon ke naam bataiye jahan se adhiktar mareez aate hain.**	1. 2. 3. 4. 5.
2.7. From among these villages, how far is the nearest villages in kms (or miles or kos=3kms)) and how far is the furthest village in kms.? **Inmein se sabse nikat tam gaon kitne kilometre ki doori par hai aur sabse door ka gaon kitni doori par?**	Name of nearest village (nikat tam gaon ka naam) : Distance (doori) : kms Name of furthest village (sabse door gaon ka naam) : Distance (doori) : kms
2.8. Besides seeking treatment, do people also come to you to discuss any personal or social matters? **Kya ilaj karvane ke alava, kabhi log aapke paas kuch niji, parivarik ya samajik salah ya charcha ke liye aate hain?** 1= yes (han) 2= no (nahin)	☐
2.9. If yes, what issues do they discuss with you? **Agar han, to salah ya charca ka vishay kya hota hai?**	

SECTION 3: RTI/STI RELATED

3.1. Do you see any patients suffering from: **Kya aapke paas in smasyaon ko lekar mareez aate hain:** (3.1.a-k to be filled up with male and female symptoms obtained through the free-listing)	1=Yes 2=No	3.2.What do you think is the cause of each of these symptoms? (interviewer to ask for each symptom) **Aapke vichar mein in mein se har samasya ya lakshan ke karan kya hain? (Interviewer har lakshan ke bare mein poochen)**	3.3. How many patients suffering from each of these symptoms did you see in the: **In lakshanon ke kitne rogi aapne dekhe:** (Please see from records if any **agar record hain to dekh kar batayen)**	
			Last week **Pichle saptah**	Last month **Pichle mah**
3.1.a.				
3.1.b.				
3.1.c.				
3.1.d.				
3.1.e.				
3.1.f.				
3.1.g.				
3.1.h				
3.1.i.				
3.1.j.				
3.1.k..				

3.4. Can you give us one main reason why people like to seek treatment from you for problems of their genital organs? **Aapke vichar mein prajanan angon ki bimariyon ke liye log aapke paas ilaj ke liye aana kyon pasand karte hain?Koi ek mukhya karan bataiye.**	

SECTION 4: MEDICINE & TREATMENT RELATED

4.1. Do you dispense medicines to patients directly from your clinic? **Kya aap mareezon ko dava apni dukan se hi dete hain?** 1=yes (*han*) 2=no (*nahin*)	☐
4.2. If yes, how often? **Agar han, to kya** 1=Always (*hamesha*); 2= Usually (*aamtaur par*); 3= sometimes (*kabhi Kabhi*); 4= rarely (*bahut kam*)	☐
4.3. If you do not dispense medicine directly from your clinic, or do not always dispense, what are the other methods by which you provide medicine to your patients? **Agar aap dava apni dukan se nahin dete, ya phir hamesha nahin dete, to aur kis prakar se aap mareezon ko dava dete hain?** 1=provide written prescriptions for all medicines (*sabhi davayon ke liye parchi par likh kar dete hain*) 2= provide written prescriptions for medicines not available at the clinic (*jo dava dirnic mein uplabdh nahin hoti use parchi par likh kar dete hain*) 3= provide written prescriptions for more expensive medicines and provide the cheaper ones from the clinic (*mahngi dava parchi par likh kar dete hain, sasti dirnic se dete hain*) 4= any other-please describe (*anya- vivran de*) 99= not applicable (*lagu nahin*)	☐☐
4.4.What type of medicines (of which pathy) do you store in your clinic and dispense? **Aap kis kis pranali ki davayen apne clinic mein rakhte hain aur mareezon ko dete hain?**	
4.4.i Allopathic 1=Yes 2=No	☐
4.4.ii. Ayurvedic 1=Yes 2=No	☐
4.4.iii. Homeopathic 1=Yes 2=No	☐
4.4.iii. Unani 1=Yes 2=No	☐
4.4.iv. Electrohomeopathy 1=Yes 2=No	☐
4.4.v. Any other (specify) 1=Yes 2=No	☐

Question 4.5 should be asked to only those practitioners who store and dispense two or more different types of medicines. **Prashan 4.5 keval unhi chikitsakon se poonche jo ek se adhik pranali ki dava apne clinic par rakhte aur mreezon ko dete hain.** 4.5. Do you usually provide these medicines in a mixed form. Or do you give them in a pure separate form to different patients? **Kya aamtor par dono tarah ki dava mila kar dete hain ya kabhi ek pranali ki aur kabhi doosri pranali ki?** 1= Mixed (*mili juli*); 2= separate (*alag alag*); 99= not applicable (*lagu nahin*)	☐☐
4.6. Where do you usually buy your medicines from? Please tell us what type of shop and where it is located (name of town or village). **Aap apni davayen aamtor par kis tarah ki dukan se khareedte hain aur yeh kahan par sthit hai?** 1=wholesaler (*thok vikreta*); 2= Retailer (*phutkar vikreta*); 3= Chemist shop (*chemist ki dukan ya medical store*)	☐ Name of town or village where shop is located
4.7. How often do you restock your medicines? **Kitne samay baad aap davaiyan khareedte hain?** 1= weekly (*har saptah*); 2= once in 15 days (*15 din mein ek bar*) 3= once a month (*mah mein ek baar*); 4= daily (*rozana*); 5= Any other (*anya – spasht karen*); 99= NA (*lagu nahin*)	☐☐
4.8. How many days' medicine do you usually give your patients at a time? **Aamtor par aap apne mareezon ko kitne din ki khurak dete hain?** 1=One day's (*ek din ki*); 2= Two days' (*do din ki*); 3= 3 days' (*teen din ki*); 4=4-5 days' (*4-5 din ki*); 5= Depends on illness (*bimari par nirbhar karta hai*); 6= any other –specify (*anya-spasht karen*)	☐
4.9. How do you update your knowledge of new drugs and treatment? **Interviewers to probe for all possible methods by which the practitioner updates his knowledge.** **Aap nayi davayon aur ilaj ki jankari kahan se prapt karte hain?** *(Interviewer vistar pooruk jaankari lein ki chikitsak kahan se nai jaankari prapt karte hain)*	
4.10. Do medical representatives visit your clinic? **Kya aapki dukan par Medical Representative aate hain?** 1=Yes 2=No	☐

4.11. If yes, how often? **Agar han, to kitne samay baad ate hain?** 1=once a month (*mah mein ek baar*); 2= Twice a month (*mah mein do baar*); 3= 4 times a month or weekly (*mah mein 4 baar ya har saptah*); 4= More than 4 times a month (*mah mein char baar se adhik*); 5= Once in two months (*do mah mein ek baar*)	☐
4.12. Does your fees or payment include both the cost of medicines and consultation or only one or the other? **Rogi jo aapka bhugtan karte hain, who dava aur paramarsh dono ke liye ya phir keval kisi ek ke liye?** 1= Both (*dono ke liye*); 2= Only medicines (*keval dava ke liye*); 3= Only consultation (*keval paramarsh*)	☐
4.13. In what form do patients usually make their payment? **Rogi kis prakar se aapka bhugtan karte hain?** 1= In cash (*rupay paise se*); 2= Give grain (*anaj de kar*); 3= Give vegetables (*sabji de kar*); 4= Both in cash and in kind (*dono tarah se*); 5= Pay on credit (*udhar kar ke*)	☐
4.14. Do patients pay immediately? **Kya rogi samay se bhugtan karte hain?** 1=Always (*hamesha*); 2= Usually (*aamtor par*); 3= sometimes (*kabhi kabhi*); 4= never (*kabhi nahin*)	☐
4.15. What percentage of patients would you say pay immediately? **Kitne pratishat rogi aapke vichar se turant bhugtan karte hain?** 1= 100%; 2= 80-99%; 3=60-80%; 4= 50-60 %; 5=30-60 %; 6=any other- specify (*anya-spasht karen*)	☐
4.16. Among those who do not pay immediately, what percent would you say do not pay at all? **Jo rogi turant bhugtan nahin karte, unme se kitne pratishat kabhi nahin bhugtan karte?** 1=1%; 2= 2-3 %; 3= 3-5%; 4= 6-10%; 5= more than 10%; 99= NA (*lagu nahin*)	☐☐
4.17. Among those patients who do not pay immediately but pay later, after how long do they usually pay? **Jo rogi turant bhugtan na karke baad mein bhugtan karte hain, ve aamtor par kitni der baad bhugtan karte hain?** 1=within a week (*ek saptah ke ander*); 2= between 1 week upto a month (*ek saptah aur ek mah ke beech*); 3=	☐☐

between 1month to 6 months (*ek mah se 6 mah ke ander*); 4= more than 6 months later (*6 mah se adhik*) ; 5= any other – specify (*anya-spasht karen*); 99= NA (*lagu nahin*)	
4.18. Do you ever refer your patients? **Kya aap rogiyon ko refer karte hain?** 1=Yes 2= no	☐

4.19. If yes, please tell us the names of the referral facilities and where these are located? **Agar han, to refer karne ke sthan ke naam aur jagah bataiye.**	S.no.	Name and place (*nam aur jagah*)	Specialit y (*khasiyat*)

4.20. What facilities do you offer at your own clinic? ***Aapke apne clinic par kya kya suvidha uplabdh hai?*** 1= Injections; 2= IV fluids; 3= small surgeries (*choti moti cheera phadi*) 4= none 5= any other (*anya – spasht karen*)	☐

SECTION 5: EDUCATION/TRAINING RELATED

5.1 Upto which class have you studied? **Aap kaun si kaksha tak parhe hain?** 1= upto class V (*kaksha 5 tak*); 2= upto class VIII (*kaksha 8 tak*); 3= upto class X (*kaksha 10 tak*); 4= Inter	☐
5.2. Have you obtained any qualifications after school? **School ke baad aap kahan tak parhe hain?** 1=Yes 2= No	☐

5.3.i. If yes, qualifications obtained (*yogyata prapt*)	5.3.ii. Name and place of Institute (*Institute ka naam aur jagah ka naam*)	5.3.iii. Type of course (kis tarah ka course : 1= Regular (*niyamit*), 2= Correspondence (*patrachar*) 3=any other (anya)	5.3.iv. Duration of course 1= 6 mths. 2=1 year 3=2 years 4=3 years 5=4 years 6=more than 4 years

5.4. Before staring your independent practice, were you attached with any other doctor or nursing home? **Apni swatantra practice shuru karne se pehle kya aap kisi anya doctor ya nursing home ke saath jude the?** 1= Yes 2=No	☐

5.5. If yes, please tell us where all you were attached before you started your practice.
Agar han, to hamein bataiye aap kahan kahan jude the?

Place where attached (*kis jagah*)	Type of doctor attached with (*kis prakar ke doctor ke saath*)	No. of years of attachment (*kitne varsh tak*)	Type of work done during attachment (*kis prakar ka kaam kiya yahan par*)

5.6. For how many years have you been practicing independently? **Aap kitne varsh se swatantra practice kar rahe hain?** 1=less than 1 year(*ek varsh se kam*); 2= 1-2 years; 3= 3-5 years; 4= 6-10 years; 5= 5-11 years; 6= More than 16 years; 7= any other	☐
5.7. Are you a member of any association? **Kya aap kisi association ke member hain?** 1=yes 2= No	☐
5.8. If yes, please tell us the name of this association? **Agar han, to association ka naam bataiye.**	
5.9. Why do people like to seek treatment from you in general? Please give us 3 main reasons. **Aapke vichar mein aam bimariyon ke liye log aapke paas ilaj ke liye aana kyon pasand karte hain? Hamein 3 mukhya karan bataiye.**	1. 2. 3.

APPENDIX 5 - HOUSEHOLD SURVEY QUESTIONNAIRE

Study ID No.

0.1	Name of interviewer **Interviewer ka naam**	
0.2	Name of person who checked this form **Form check karne vale ka naam**	
0.3	Date of Interview **Interview ki tarikh**	☐☐ ☐☐ ☐☐ Din mah varsh
0.4	Time interview started **Interview shuru hone ka samay**	☐☐ Ghante ☐☐ min
0.5	Time interview completed **Interview samapt hone ka samay**	☐☐ Ghante ☐☐ min

SECTION 1: LOCATION INFORMATION Jagah ki jankari

1.1.	Name of the village ***Gaon ka naam***	
1.2.	Name of the block ***Vikaskhand ka naam*** 1 = Jaunpur; 2 = Bhilangna; 3 = Pratapnagar 4 = Jakhnidahar; 5 = Kirtinagar; 6 = Narendranagar	☐
1.3.	Nearest Primary Health Centre/additional PHC **Nikat tam prathmik swasthya kendra/atirikt kendra**	
1.4.	Distance from the nearest PHC **Nikat tam swasthya Kendra se doorie, kms mein**	☐☐
1.5.	Time required to reach the PHC in the rainy season **Barsaat ke mausam mein aapko nikat tam swasthya kendra pahunchne mein kitna samay lagta hai?** 1 = less than 15 minutes ***(15 mt se kam)*** 2 = 15 minutes to 30 minutes (***15 mt se 30 mt tak)*** 3 = 30 minutes to 1 hour ***(30 mt se 1 ghanta)*** 4 = 1hour to 2 hours (***1ghante se 2 ghante***) 5 = more than 2 hours ***(2 ghante se adhik***) 6 = inaccessible (***pahuncha nahin ja sakta***)	☐☐
1.6.	House number if any **Makan sankhya agar hai to**	

SECTION 2: PERSONAL INFORMATION

2.1.	Sex of the respondent **Prativadi ka ling** 1 = Male 2 = Female	☐
2.2.	What is your approximate age? **Aapki umar lagbhag kitne saal hogi?** 1 = 15-18; 2 = 19- 25; 3 = 26-35; 4 =36-45	☐
2.3.	What is your position in this household? **Is ghar parivar mein aapka kya darza hai?** (codes will be decided after piloting) 1 =eldest male member; 2 =eldest female member; 3 =	☐
2.4.	Type of house (interviewer to observe and write) **Makan kis prakar ka hai (interviewer dekh kar likhen)** 1 = made of mud (***kutcha***); 2 = made of bricks (***pucca***) 3 = mixed	☐
2.5.	Do you possess any of the following? (Please observe and tick as far as possible. Ask for those you cannot see) **Kya aapke ghar mein inme se koi saman hai? (Jahan tak ho sake, dekh kar tick karen. Jo nahin dikh raha, keval usi ke bare mein poonche)**	
	a) Radio 1 = Yes; 2 = No	☐
	b) TV 1 = Yes; 2 =No	☐
	c) Sofa set 1 = Yes; 2 = No	☐
	d) Sewing machine (silai machine) 1 = Yes; 2 = No	☐
	e) Motor cycle/scooter 1 = Yes; 2 =No	☐
2.6.	What is your level of education? **Aap kahan tak padhe hain/padhi hain?** 1 = Not educated (***nahin padhe***) 2 = Class 1-3 ***(kaksha 1-3 tak)***; 3 = class4- 5 (***kaksha 4-5 tak***); 4 = class 6- 8 (***kaksha 6-8 tak***); 5 = class 9-10 (***kaksha 9-10 tak***) 6 = class 11-12 (***Inter tak***) ; 6 = Graduate; 7 =Post Graduate	☐
2.7.	What is your current marital status? **Is samay aapki vaivahik avashta kya hai?** 1 =Unmarried (***avivahit***); 2 = married (***vivahit***); 3 = widowed (***vidur/vidhwa***); 4 = separated/divorced (***alagh/talakshuda***) If respondent is unmarried, skip the remaining questions in this section, and move to SECTION 3. **Agar prativadi avivahit hai, to is section ke baki prashan na poochen aur SECTION 3 par pahunchen**	☐

2.8.	What is the current occupation of your spouse? **Aapke pati/aapki patni is samay kya kaam dhanda karte hain?** 1= Housewife (*ghar ki dekhbhal*); 2= farming (*kheti badi*); 3= unskilled worker ( ); 4= craftsman ( ); 5= service industry (*hotel ityadi mein kaam*); 6= armed forces (*fauj*); 7= any other (*anya- spasht karein*); 99= NA (*lagu nahin*)	☐☐
2.9.	What is your current occupation? **Aap is samay kya kaam dhanda karte hain/karti hain?** 1= Housewife (*ghar ki dekhbhal*); 2= farming (*kheti badi*); 3= unskilled worker ( ); 4= craftsman ( ); 5= service industry (*hotel ityadi mein kaam*); 6= armed forces (*fauj*); 7= any other (*anya- spasht karein*); 99= NA (*lagu nahin*)	☐☐
2.10.	In case your spouse's place of employment is away from your home and in another location, then where is it? **Agar aapke pati/aapki patni ghar se bahar rehkar kaam karte hain, to kahan par?** 1= another place in the same district; 2= another district 3= a big city 4=any other 5= NA (*lagu nahin*) If spouse lives and works from home, then IR should skip the next two questions 2.11-2.12 and move to Q. 2.13.	☐☐
2.11.	How many times in a year does your spouse come home for a visit? **Saal bhar mein aapke pati/patni kitni baar ghar aate hain/ aati hain?** 1= once; 2= twice 3= three times 4= four times 5= more than 4 times 6= once in two years 99= NA	☐☐
2.12.	When he/she does visit, how long does he/she stay? **Jab aate hain/aati hain, to kitne samay ke liye aate/aati hain?** 1=less than a week; 2= one -two weeks; 3= two-four weeks 4=four –six weeks; 5=six –eight weeks; 6=more than eight weeks 99=NA	☐☐
2.13.	In case your place of employment is out of this town, then where is it? **Yadi aap ghar se bahar rehkar kaam karte hain/karti hain, to kahan par?** 1= another place in the same district; 2= another district 3= a big city 4=any other 5= NA (*lagu nahin*) If respondent lives and works from home, then IR should skip the next two questions 2.14-2.15 and move to Q. 2.16.	☐☐
2.14.	How many times in a year do you visit home? **Saal bhar mein aap kitni baar ghar aate hain/ aati hain?** 1= once; 2= twice 3= three times 4= four times	☐☐

	5 = more than 4 times 6 = once in two years 99 = NA	
2.15.	When you do visit, how long do you stay? **Jab aate hain/aati hain, to kitne samay ke liye aate/aati hain?** 1 =less than a week ; 2 = one -two weeks ; 3 = two-four weeks 4 =four –six weeks ; 5 =six –eight weeks; 6 =more than eight weeks 99 =NA	☐☐
2.16.	How many children do you have? **Aapke kitne bachche hain?** 1 = 2 or less (*2 ya 2 se kam*); 2 = 3-5; 3 = 6-8; 4 = more than 8 (8 *se adhik*); 5 = None (*koi nahin*) 99 = NA *(lagu nahin)*	☐☐
2.17.	What is the age of your youngest child? **Aapke sabse chote bachche ki kya umar hai?**	☐☐

SECTION 3: GENERAL HEALTH CARE SEEKING

3.1	We have so far been asking you for some general personal information. We would now like to talk to you about healthcare services and your experiences with these services. You may be able to recall that we had talked to you at the beginning of this interview about our endeavor to improve the quality of health care services and providers in remote villages. The information that you give us now will help us in that endeavor. We are not recording your name anywhere on this form because that is not an important criterion for us. We are only interested in your experiences with health-related problems and services. Can you recall for us any illness that you have had in the recent past for which you had to seek treatment or medication from someone? What were the symptoms of this problem/illness? (IR: please record the code for just one symptom. Do not read out the codes. Record the code as the respondent answers the question) 1 = Pain (specify where) 2 = Vomiting with Diarrhea 3 = Diarrhea/dysentry 4 = Fever 5 = Cold/Cough 6 = Breathlessness 7 = Bitten by a snake or some other animal 8 = Wound or Injury 9 = Weakness 10 = Mental tension 11 = Menstrual Problems 12 = Pain or burning during urination 13 = Penile discharge or dhat 14 = White vaginal discharge 15 = Skin disease 16 = Back ache 17 = Others (Please specify) 18 = None 19 = Don't Know/ Can't Say IR: If the respondent indicates any symptom of RTI/STI in answer to question 3.1 please ignore all other questions in this section and proceed straight to Section 4, question 4.2	☐

3.2	If yes, then how long ago did you have this illness/problem? 1 =Yesterday 2 = This week 3 = Between 1 -2 weeks ago 4 = Between 15 days - 1 month ago 5 = Between 1 - 3 months ago 6 = 4 - 6 months 7 = 7 months - 1 year 8 = More than One year 9 = Don't Know/Can't say / can't remember 99 = Not Applicable	
3.3	What is the first action you took when you had this problem? (IR: Please record precise and detailed answers, verbatim. To PROBE or to draw out more answers you can use some of the questions listed below or other questions of the same type) - If a doctor was visited, then which type of doctor? - What was done before that? - If treatment was not sought from outside, was anything done at home and what? - If a doctor was visited, then after how long?	
3.4	Who did you go to first for treatment for this problem? (IR: Please record the name of the provider, if respondent remembers) 1 = Neighbour or friend 2 = Native healer 3 = The Village midwife 4 = The private doctor in the village (unqualified)(IR should record the note of the provider, if recalled) 5 = Private doctor in nearby bigger village/town/bazaar (unqualified) (please record the name) 6 = Private qualified allopathic practitioner (record the name) 7 = Private ayurvedic/unani/homeopathic practitioner (record the name) 8 = Govt. doctor at the PHC (record name if known to respondent) 9 = Govt. doctor at the community health center-CHC- or district hospital(record name if known to respondent) 10= Govt. auxiliary Nurse Midwife (record name if known) 11 = Private hospital (record name if known) 12 = Pharmacist 13 = Any others (please specify) 99 = Not applicable	
3.5	Where exactly is this place where you went to get treated first? (IR: please record detailed and precise information-verbatim)	

3.6	By what means did you get there and how long did it take you to reach there? (IR: record detailed and precise answers-verbatim)	
3.7	Whose decision was it to seek treatment at this place? 1 = Self 2 = Husband 3 = Wife 4 = Mother in Law 5 = Husband's sisters or nanad (co sister, husband's brother's wife) 6 = Brother in Law elder/younger 7 = Father in Law 8 = Elder son or Daughter 9 = Friends or neighbours 10 = Mother 11 = Father 12 =Others (please specify) 99 = Not applicable	☐☐
3.8	Why did you choose to go to this provider/doctor first? Please tell us three important reasons for this choice. 1 = Close-by and accessible 2 = Always available 3 = Is famous and highly reputed 4 = Always seek treatment from him 5 = Known to me/us 6 = Provides good medication, relief is quick 7 = Was advised by someone to see him 8 = Deals with patients in a pleasing manner 9 = Speaks our language 10 = Gives inexpensive medicine 11 = Gives medicine on credit 12 = Maintains confidentiality and privacy 13 = Makes home visits when necessary 14 = Others (Please specify) 15 = Don't Know/can't Say	☐☐ ☐☐ ☐☐
3.9	Could you please tell us any one aspect of the provider that did not appeal to you? (IR Record detailed and precise answers-verbatim)	

3.10	What medication did you get from this provider and for how long? (IR Record detailed and precise answers- verbatim)	
3.11	What was the cost of the medicine? (IR record detailed and precise answers-verbatim)	☐☐☐ Rs.
3.12	Did you get well with this medicine? 1= YES 2 = NO (IR: If the respondent answers No, please skip Q. 3.13 and ask Question No 3.14)	☐
3.13	If yes, then how long did it take you to get well? (write verbatim)	
3.14	If you did not get well, then what did you do next? (write verbatim)	

SECTION 4: STI/RTI RELATED

Interviewer to explain once again to the respondent:

"We have so far been talking to you about general health problems, and we discussed where you went to get these treated or attended to. But there are some diseases or infections that are especially unique to men and women. Because these are related to the reproductive tracts, men and women are sometimes shy to talk about them. We now want to talk to you about these very problems. Your open and honest responses and the information we gather from you will really help us a lot in our endeavour to improve the quality of services here. This will help a lot many people in the future. We would like to assure you that all this information will remain entirely confidential and we will not associate the information that you provide with your name in any way. We would like to reassure you again that we will not disclose your name to anyone."

4.1	Now could you please recall for us if you have ever had any of these symptoms? (IR: Please read out each symptom[16] listed below and check if this has been experienced)			
	If respondent is MALE check for the following:			☐☐
4.1a.	Dhat or white discharge	1 = Y	2 = N	☐☐
4.1b	Nightfall or swapndosh	1 = Y	2 = N	☐☐
4.1c	Itching on the Penis	1 = Y	2 = N	☐☐
4.1d	Boils or ulcers on the penis	1 = Y	2 = N	☐☐
4.1.e	Burning during urination	1 = Y	2 = N	☐☐
	If respondent is FEMALE, check for the following:			
4.1.f.	White Discharge	1 = Y	2 = N	☐☐
4.1.g	Burning during urination	1 = Y	2 = N	☐☐
4.1.h.	Genital ulcers	1 = Y	2 = N	☐☐
4.1.i.	Back ache/lower abdominal pain	1 = Y	2 = N	☐☐
	IR: If the respondent does not indicate any of these symptoms try and probe further. If there are still no symptoms reported, then carry on to section 5			
4.2.	If yes, how long ago did you experience these symptoms /get the illness?			☐☐ mths ☐☐ yrs.
4.3	Did you take any treatment for these symptoms?			☐☐

[16] These are symptoms obtained from the free listing in Tehri Garhwal. For Agra, the list of symptoms will reflect the findings of the free-listing done there.

	1 – YES 2 = No (IR: try and probe well to ascertain whether treatment was ever taken or not. Ask that even if treatment was not received from an outside provider, was any advice taken from family and friends/ neighbour or was there any home based treatment?	
4.4	If no treatment was ever taken or advice never sought what was the reason for not seeking treatment at all? IR: Please record precise and detailed answers – verbatim)	

4.5. If care was sought, ask the questions given in the table on the next page and record all answers carefully:

4.5a. Who all did you seek treatment from? (IR: if a doctor is mentioned, record whether allopathic or ISM. Also record name and qualifications of doctor)	4.5.b. Location of clinic where treatment was sought, Mode of transport and Travel Time to reach there	4.5.c Who made the decision to come here to seek treatment?	4.5.d Why was treatment sought here? Please tell us 3 main reasons	4.5.e. What was the medication received? For how many days?	4.5.f How much did the medicine cost?	4.5.g What was the effect of the medicine?

SECTION 5: QUALITY OF CARE

	IR: In case the respondent has experienced symptoms of RTI/STI and has sought treatment in the past or is currently under treatment, then skip Questions 5a to 5.2.c And proceed to Q 5.3.a	
5 a	If you were to ever experience a problem like white discharge or painful urination, who would you <u>first</u> like to go to for treatment and why? (IR please record detailed and precise answers-verbatim)	
5.1	**PROXIMITY AND AVAILABILITY OF PROVIDER**	
5.1a	How far should the clinic be for you to be able to reach it easily? 1 – In the village 2 = 1/2km from the village 3 = 1 –2 kms from the village; 4 = 2 kms from the village 5 = don't know/ can't say 99 = Not applicable	☐☐
5.1b	What is the maximum time that you can afford to spend to reach the clinic or healthcare facility?	☐☐ Hours ☐☐ Mins
5.1c	What would be ideal for you in terms of the clinic's opening hours and the doctor's availability? (IR : please record detailed and precise answers)	

5.1d	What facilities should a clinic have that you would like to visit for treatment of problems like white discharge or genital ulcers etc.? **(IR:** please record and probe for different facilities expected by the respondent.)	
5.2	**COST OF MEDICINE**	
5.2a	How much can you afford to spend to obtain effective and good medicine (for problems like white discharge and painful urination) ? 1 = less than 15 Rs; 2 = 15 – 25 Rs ; 3 = 25 –50 Rs 4 = 51 –100 Rs 5 = 101 –250 Rs 6 = 251 = 500 Rs 7 = More than 500 Rs 8 = Don't know/can't say	☐
5.2b	Can you pay for the medicine immediately or would you like the doctor to sometimes give the medicine on credit? 1 = can pay immediately 2 = Credit should be available 3 = Don't know / can't say	☐
5.2c	Would you always prefer to pay cash for the medicine or would you like the doctor to sometimes accept payment in kind too– for example with grain or vegetables? 1 = can pay cash 2 = should accept grain or vegetables too 3 = Don't know/can't say	☐
5.3	**EFFICACY OF MEDICINE**	
5.3a	In your opinion what would you call good medicine or good treatment especially for problems like white discharge, genital ulcers or burning micturition? **(IR:** Please record precise and detailed answers- verbatim)	
5.3b	How long should it take, in your opinion, for good medicine to cure problems like white discharge, genital ulcers or burning micturition? 1 = less than 1 day; 2 = 2 to 3 days 3 = 3 –5 days; 4 = 6 – 10 days 5 = More than 10 days; 6 = don't know/ can't say	☐

5.3.c	Should medicine be ordinarily dispensed at the clinic itself or would you be able to easily procure it from outside? 1=Should be available in the clinic; 2=can buy it easily from somewhere else too ; 3=don't know/can't say	☐

5.4	**PROVIDERS' BEHAVIOUR**	
5.4a	Many people have told us that it is very important for a doctor's behaviour and attitude to be good. What would you consider as being good behaviour? What are the main attributes of good behaviour and attitude that you would like to see in a good doctor, especially in one whom you would like to visit for problems like white discharge, genital ulcers or burning micturition? (IR: Write precise and detailed answer, verbatim)	
5.4b	How important (on a rupee scale) would you rate receiving a warm welcome at the clinic by such a doctor – like a smile, a nod, or so on? 1 = very important (16 annas) 2 = important (12 annas) 3 = not so important (8 annas) 4 = unimportant (4 annas)	☐
5.4c.	If you were to visit a doctor for a problem like white discharge, genital ulcers or burning micturition – how important (on a rupee scale) would you rate his talking to you in privacy and with confidentiality? 1 = very important (16 annas) 2 = important (12 annas) 3 = not so important (8 annas) 4 = unimportant (4 annas)	☐
5.4d	If you were to visit a doctor for a problem like white discharge, genital ulcers or burning micturition – how important (on a rupee scale) would you rate his frank and unembarrassed questioning? 1 = very important (16 annas) 2 = important (12 annas)	☐

	3 = not so important (8 annas) 4 = unimportant (4 annas)	
5.4e	How important (on a rupee scale) would you rate the doctor listening to you with concentration and attention? 1 = very important (16 annas) 2 = important (12 annas) 3 = not so important (8 annas) 4 = unimportant (4 annas)	☐
5.4f	How important (on a rupee scale) would you rate a doctor examining your internal organs, if you went with problems like white discharge, genital ulcers or burning micturition? 1 = very important (16 annas) 2 = important (12 annas) 3 = not so important (8 annas) 4 = unimportant (4 annas)	☐
5.4g	How important (on a rupee scale) would you rate the doctor explaining to you in the local language the diagnosis of your problem and the treatment? 1 = very important (16 annas) 2 = important (12 annas) 3 = not so important (8 annas) 4 = unimportant (4 annas)	☐
5.4h	How important (on a rupee scale) would you rate the doctor calling you for a follow-up visit to gauge the progress made and to find out if the medicine was being effective? 1 = very important (16 annas) 2 = important (12 annas) 3 = not so important (8 annas) 4 = unimportant (4 annas)	☐

APPENDIX 6- PROVIDER INTERVIEW

Study ID No. □□□□

(Please circle each correct answer and then code)

11	Code number of the Interviewer	Code int	□
12	Name of the provider		
13	Providers Code No: (district/block/any number from 1-99)	Codeprov	□
14	Name of the Village		
15	Code Number of the Block (according to district) 1 = 2 = 3 = 4 = 5 = 6=	Codebloc	□

SECTION 1: BACKGROUND INFORMATION ABOUT THE PROVIDER

111	Where is your native place? **(Please write name of native place and then fill in any one of the codes given below)** …… 1 = this village; 2 = this district but not this village; 3 = this state but not this district; 4 = West Bengal; 5 = other state	natplace	□
112	For how many years have you been practicing independently?	pracyrs	□□ yrs
113	Upto which class have you studied? 1 = upto class V ; 2 = 6-10 ; 3 = 11-12 ; 4 = graduate	educlass	□
114	What qualification, if any, have you obtained after school that is related	qualifi	

	to the current services that you provide? (If more than one qualification has been obtained, please refer to the highest qualification obtained) 1 = none; 2 =BAMS; 3 =BUMS; 4 =BHMS; 5 = BEMS/BEHMS; 6 = Ayurved rattan/ved visharad; 7 = RMP; 8 = any other; 9 =not applicable		☐
115.	What is the name and place of the institute from where you obtained this qualification?		
116.	What type of course was this? 1 = Regular; 2 = Correspondence; 3 =any other; 9 = Not applicable	courstyp	☐
117.	What was the duration of this course? 1 = 6 mths; 2 =1 year; 3 =2 years; 4 =3 years; 5 =4 years; 6 =more than 4 years; 9 = not applicable	coursdur	☐

SECTION 2: PROVIDER KNOWLEDGE

221	Do you sometimes have patients seeking treatment for genital ulcers? 1 = yes 2 =no 8 = no answer (does not know)	ulcpat	☐
222	What are genital ulcers caused by? **Do not prompt! Record verbatim answer here:** …… …… Then code: 1 = syphilis, chancroid, herpes (names just one of these) 2 = syphilis, chancroid, herpes (names at least two of these) 3 = 'infection', or 'unsafe sex' 'with infected partner' 4 = bacteria, virus; 5 =lack of hygiene/cleanliness 6 = any other response 8 = don't know	ulccause	☐
223	How will you treat a patient with a genital ulcer? **Do not prompt! Record verbatim answer here:**		

	…… Ask which medicine the doctor would prescribe: …… Then code: 1 = combination of antibiotics 2 = single antibiotic 3 = other allopathic drug 4 = herbs, minerals 5 = ayurvedic/unani/homeopathic medicine 6 = combination of 1 and 4 or 5 7 = combination of 2 and 4 or 5 8 = no treatment/any other treatment 9 = no answer (does not know) 21 = correct drug as per NACO	ulctreat	□□
224	Do you sometimes have male patients seeking treatment for painful discharge from the penis? 1 = yes 2=no 8 = no answer (does not know)	dispat	□
225	What is discharge from the penis caused by? **Do not prompt! Record verbatim answer here:** …… Then code: 1 = gonorrhoea, chlamydia (names just one of these) 2 = gonorrhoea, chlamydia (names at least two of these) 3 = 'infection', or 'unsafe sex' 'with infected partner' 4 = bacteria, virus 5 = UTI (urinary tract infection) 6 = any other response 8 = don't know	discause	□

226	How will you treat a patient with a painful discharge from the penis? **Do not prompt! Record verbatim answer here:** …… Ask which medicine the doctor would prescribe: …… **Then code:** 1 = combination of antibiotics 2 = single antibiotic 3 = other allopathic drug 4 = herbs, minerals 5 = ayurvedic/unani/homeopathic medicine 6 = combination of 1 and 4 or 5 7 = combination of 2 and 4 or 5 8 = no treatment/ any other treatment 9 = no answer (does not know) 21=correct drug/s	distreat	☐☐
227	Do you sometimes have women seeking treatment for white vaginal discharge? 1 = yes 2=no 8 = no answer (does not know)	vagpat	☐
228	What are the possible reasons for white vaginal discharge in a woman? **Do not prompt! Record verbatim answer here:** …… **Then code:** 1 = infection (with Trichomonas bacteria or fungus) 2 = sex with infected partner; but also a spontaneous infection 3 = mental stress, or depression 4 = a combination of 1 and 3, or 2 and 3 5 = any other response 8 = don't know/no answer	vagcause	☐
229	How will you treat a woman with white vaginal discharge? **Do not prompt! Record verbatim answer here:** ……	vagtreat	☐☐

	Ask which medicine the doctor would prescribe: …… **Then code:** 1 = combination of antibiotics 2 = single antibiotic 3 = other allopathic drug 4 = herbs, minerals 5 = ayurvedic/unani/homeopathic medicine 6 = combination of 1 and 4 or 5 7 = combination of 2 and 4 or 5 8 = any other treatment/no treatment 9 = no answer (does not know) 21=correct drug/s		
230	What questions would you ask a woman who came to you complaining of a genital ulcer? **Do not prompt! Record verbatim answer here:** …… …… **Then code:** 1 = ask her about duration and severity of symptoms 2 = ask her about risk behaviour (related to sex practices or drug use etc. through which she may get infected) 3 = combination of 1 and 2 above 4 = any other questions 8 = no answer (does not know)	diagulc	☐
231	If a woman came to you complaining of a genital ulcer, what else would you do besides asking her questions? Do not prompt! Record verbatim answer here: …… **Then code:** 1 = ask women to undress and lie down, then examine by inspection 2 = ask women to undress, then examine by inspection 3 = will not examine 4 = get a laboratory investigation 5 = any other response 6 = combination of 1&4 or 2&4 7 = combination of 3&4 8 = no answer (does not know)	diaexam	☐

232	A woman has pain in the lower part of her belly. She feels ill, and has a fever. What is your diagnosis? **Do not prompt! Record verbatim answer here:** …… …… Then code: 1 = pelvic inflammatory disease, infection of the womb and pelvis 2 = probable sexually transmitted infection, infection by bacteria 3 = urinary tract infection, bladder infection 4 = any other response 8 = no answer (does not know)	bellypn	☐
233	What are the possible harmful consequences of sexually transmitted infections in a woman? **Do not prompt! Record verbatim answer here:** …… …… …… …… **Then underline any correct answer given in the list below:** Chronic pain of the lower abdomen, ectopic pregnancy, death, infertility, get also HIV/AIDS; stillbirth, sick baby, blind baby THEN CODE: 1 = mentions one of the above 2 = mentions two or more of the above 3 = mentions other (incorrect) consequences and at least one of the above 4 = mentions other (incorrect) consequences only 8 = does not know	consqu	☐
234	Assume you have a male patient with urethral discharge or a genital ulcer. What advice or information will you give to the patient, besides prescribing medicines? **Do not prompt! Record verbatim answer here:** …… …… …… …… **Then underline any correct answer given in the list below:**	advice	☐

	Do not have sex until disease is cured; need to treat partner; have only one partner; use condoms with any casual partners **Then code:** 1 = mentions one of the above 2 = mentions two or more of the above 3 = mentions other (incorrect) answers and at least one of the above 4 = mentions other (incorrect) answers only 8 = does not know		

Name and signature of the interviewer : ... ...

Date of the observation (day/mth/yr) : ... ...

APPENDIX 7- FACILITY ASSESSMENT

Study ID No.

(IR: *Most questions are to be observed and appropriate responses ticked, except in the starred questions which will need to be observed AND asked from the providers.)*

11.	Code no. of the Investigator	Codeint	
12.	Provider's Clinic No. 1 = first clinic; 2 = second clinic; 3 = third clinic	clinser	

SECTION 1: ACCESS AND AVAILABILITY

111.	Name of the clinic		
112. *	Address of the clinic		
113.	In what sort of area is the Clinic located? 1 = In the Bazaar 2 = In the interior of the village 3 = Near the road, but away from the bazaar 4 = Any other (specify)	clinlocn	
114.	How can the clinic be reached / accessed ? 1 = Only on foot 2 = Both on foot and by a vehicle 3 = Any other (Specify)	clinacc	
115. *	Clinic opening hours Morning: Hrs mts. To Hrs mts. Evening: Hrs mts. To Hrs mts. Based on the above timings, the observer should fill in any of the following codes in the box in the right column. Codes: 1 = morning only; 2 = evening only; 3 = morning and evening; 4 = morning to evening; 5 = 24 hours	clinopen	

116. *	Name of nearest Primary Health Centre / Additional Primary Health Centre		
117. *	Distance from the Nearest Primary Health Centre or Additional Primary Health Centre	phcdist	kms
118. *	Name of nearest town		
119. *	Distance from nearest town	towndist	kms

SECTION 2: PHYSICAL ENVIRONMENT

221.	How many rooms does the clinic have? 1 = One; 2 = Two; 3 = more than 2 4 = Any other (Specify)	clinroom	
222.	Description of waiting area for patients: 1 = Waiting (and sitting) area outside the Clinic 2 = Waiting and sitting space inside the clinic 3 = Waiting and sitting areas both inside and outside the clinic 4 = No sitting area for waiting	clinwait	
223.	Provision for confidentiality to be maintained during consultation and/or counseling. 1 = Separate consultation room 2 = Separate space (curtained or partitioned) for consultation) 3 = "Open Consultation" in the presence of other patients/visitors 4 =Any other (Specify)	clinpriv	
224.	Facilities for privacy and confidentiality during physical examination 1 = Separate Room for examination 2 = Separate enclosure for examination 3 = No such facility 4 = Others (specify)	exampriv	
225.	Facility for physical examination (Cot / table / charpoy) 1 =Yes 2 = No	examtabl	

SECTION 3: EQUIPMENT AND SUPPLIES

*	What are the sources of light / illumination in the clinic? (IR: Please circle and code ALL that are applicable, from 331-335)		
331.	Natural light from door or window 1=yes 2=no	natlite	
332.	Electric bulb or tubelight 1=yes 2=no	eleclite	
333.	Battery powered torchlight/flashlight 1=yes 2=no	battorch	
334.	Gas or oil fired Lantern 1=yes 2=no	lantern	
335.	Others (specify)	othlite	
336. *	Facility for the doctor to wash hands with soap and water? 1 = Available 2 = Not Available	washfac	
*	Facility for STERILISING equipment (please code that are applicable from 335-341)		
337.	Autoclave 1 = Yes 2 = No	autoclav	
338.	Pan/vessels for boiling 1 = Yes 2 = No	vessel	
339.	Pressure cooker 1 = Yes 2 = No	prcooker	
340.	Stove 1 = Yes 2 = No	stove	
341.	Forceps etc. to pick up sterilized equipment from the pan 1=Yes 2= No	forceps	
342.	Chemical steriliser 1 =Yes 2 = No (please note type/name and strength and how often is it changed) ... ...

344.	Stethoscope	1 = Yes 2 = No	stethos	
345	Weighing Machine	1 = Yes 2 = No	bpinstr	
346	Thermometer	1 = Yes 2 = No	weight	
347	Speculum	1 = Yes 2 = No	thermo	
348	Gloves	1 = Yes 2 = No	speclm	
349	Condoms	1 = Yes 2 = No	gloves	
350.	Instrument to check blood pressure	1=Yes 2= No	condom	
351.	Paracetamol	1 = Yes 2 = No	paracet	
352.	Cotrimoxazole	1 = Yes 2 = No	cotri	
353.	Erythromycin	1 = Yes 2 = No	arithro	
354.	Ciprofloxalin	1 = Yes 2 = No	cipro	
355.	Tetracycline	1 = Yes 2 = No	tetra	
356.	Doxycycline	1 = Yes 2 = No	doxi	
357.	Norflox	1 = Yes 2 = No	norflox	
358.	Ampicillin	1 = Yes 2 = No	ampici	
359.	Bleaching powder for disinfecting	1= Yes 2 =No	bleach	
360.	Disposable syringes	1=Yes 2= No	dispsyr	
361.	Separate box for waste disposal	1=Yes 2 = No	dispbox	
362.	Separate box for syringe disposal	1=Yes 2 = No	syridisp	
363.	Method of disposal of used syringes/needles and other clinical waste 1 = In a pit ; 2 = On the rubbish dump (a central one in the village) 3 = Taken by the municipality sweeper 4 = Emptied into a drain or a local canal		wastdisp	

	5 = Burnt 6 = Sold to waste collector (kabadiwala) 5 = any other (specify)		

Name of the assessor:... ... ...

Signature of the assessor:... ... ...

Date of the assessment (day/mth./Yr.):... ... ...

APPENDIX 8 – OBSERVATION TOOL FOR OBSERVING PATIENT-PROVIDER INTERACTION

PATIENT IDENTIFICATION SHEET

(Note for the observer: Once the observation is complete, please detach this sheet from the remaining pages and store separately, in order to maintain patient's confidentiality)

1	STUDY NO. Should ideally include: DIST. / BL. / PP NUMBER / INDIVIDUAL NUMBER OF PATIENT	studyno	
2	NAME OF PATIENT		
3	SEX OF PATIENT 1 = Male 2 = Female	patsex	
4	APPROXIMATE AGE OF PATIENT IN YEARS	patage	yrs
5	FULL ADDRESS OF PATIENT INCLUDING NAME OF VILLAGE AND ANY IDENTIFYING LANDMARK OR NAME OF HOUSEHOLD HEAD		
	UNIQUE DEMOGRAPHIC CHARACTERISTICS TO RE-IDENTIFY THE PATIENT – 6a to 6d in the rows below (For treatment purposes)		
6	Father's/husband's name		
7	Marital status 1 = married; 2 = unmarried; 3 = separated/divorced; 4 = widowed	marstat	
8	Sex of youngest child 1 = M; 2 = F	chdsex	
9	Name of youngest child		
10	RESULT OF THE OBSERVATION (please note in the end) 1 = completed successfully; 2 = patient did not give consent; 3 = patient withdrew consent at some stage during the observation	obsres	
11	STICKER NUMBER (same as for laboratory specimen)		

SECTION 1: GENERAL INFORMATION

111.	Code number of observer	obscode	
112.	Name of provider observed		
113.	Type of provider 1 = Herbalist; 2 = Without a certificate, dispensing mostly allopathic drugs; 3 = RMP certificate holder; 4 = BEHMS/BEMS certificate holder 5 = Ayurved ratan/ved visharad certificate holder 6 = Has any other certificate 7 = BAMS/BUMS/BHMS certificate holder 8 = any other	provtype	
114.	Individual provider code number	provcode	
115.	Provider's clinic's serial no. 1 = first clinic; 2 = second clinic; 3 = third clinic	clinserl	
116.	District 1 = Agra 2 = Tehri	coddist	
117.	Block 1 = 2 = 3 = 4 = 5 = 6 =	codbloc	
118	Time observation started hrs. mts.		
119	Time observation finished hrs. mts.		
120	In case there was a break in the interaction, please note the time that the patient provider interaction was resumed. hrs. mts.		
121	Pease note the time at which the interaction was finally completed hrs. mts.		
122	Overall duration of the patient provider interaction (total of (119-118) + (121-120)) 1 = <5 mts.; 2 = 6-10 mts.; 3 = 11-20 mts; 4 = >20 mts.	totaldur	

SECTION 2: PATIENT'S BACKGROUND INFORMATION

221	Sex of the patient 1 = male 2 = Female	Patsex	
222	Is this the patient's first visit or follow up visit? 1 = first visit; 2 = follow up visit	Visitno	
	Please fill the following rows (223-228) with the main presenting complaints of the patient INITIALLY (Observers to check with the doctor and then fill up the columns)		
223	Lead complaint of patient (refer CODE SET 1)	Leadcomp	
224	Duration of complaint (refer CODE SET 2)	Leaddur	
225	Other complaint 1 (refer CODE SET 1)	Otcompon	
226	Duration of complaint (refer CODE SET 2)	Comondur	
227	Other complaint 2 (refer CODE SET 1)	Otcomptw	
228	Duration of complaint (refer CODE SET 2)	comtwdur	
	Please fill in the rows below (229-232) the complaints that emerged FINALLY after probing or questioning by the doctor (apart from those listed in 223-228)		
229	Final complaint 1 (refer CODE SET 1)	Fincomon	
230	Duration of complaint (refer CODE SET 2)	Fcomondu	
231	Final complaint 2 (refer CODE SET 1)	fcomptw	
232	Duration of complaint (refer CODE SET 2)	fcomtwdu	

CODE SET 1	CODE SET 2
CODES FOR COMPLAINTS	CODES FOR DURATION
01 = dhat (urethral discharge in males) 02 = swapndosh (nightfall in males) 03 = ulcers/boils and blisters on the penis 04 = itching on the penis 05 = vaginal discharge 06 = ulcers/boils and blisters on the vagina 07 = itching in the vagina 08 = lower abdominal pain 09 = burning micturition 10 = weakness 11 = backache 12 = blood in urine 13 = any other (specify) 14 = none 15 = doctor did not ask	1 = 1 week 2 = 1 week - <1 month 3 = 1 month - <1 year 4 = 1 year or more 5 = does not know 9 = not applicable

SECTION 3: HISTORY TAKING

331.	ASSESSMENT OF THE PROBLEM Extent to which provider enquires into the history of the symptoms- their nature, type, severity and duration (Severity means: how far do the symptoms interfere with daily routine of the patient, how uncomfortable is the patient with the symptoms) 1_____2_____3 Not at all Superficially Thoroughly Circle the appropriate number on the scale above and write the number in the code box in the right column	probass	
	ASSESSMENT OF POSSIBLE CAUSES OF THE PROBLEM In the boxes below (332-334), please note whether the provider enquires into the possible causes of the problem (causes as perceived by the provider and/or patient), or not. If yes, please note this enquiry. Also note enquiry into previous treatment undertaken, if any.		
332	Doctor enquired into possible bio-medical or physical causes and any previous treatment undertaken (e.g. sexual history/risk assessment and use of condoms) 1= Yes 2= No If yes to any of the above (either discussion of causes or previous treatment or both), observer please note what was discussed between provider and patient in this context.	bioass	
333	Doctor enquired into possible socio-cultural causes and any previous treatment undertaken (e.g. causes related to food habits, life style, values and beliefs) 1= Yes 2= No If yes to any of the above (either discussion of causes or previous treatment or both), observer please note what was discussed between provider and patient in this context.	Socioass	

334	Doctor enquired into possible psychological causes and any previous treatment undertaken (e.g. stress factors related to home/family/occupation) 1= Yes 2= No If yes to any of the above (either discussion of causes or previous treatment or both), observer please note what was discussed between provider and patient in this context.	psychass	

SECTION 4: PHYSICAL EXAMINATION

	GENERAL EXAMINATION		
441	Checked the pulse 1=Yes 2=No	Chpulse	
442	Noted temperature 1= Yes 2= No	Chfever	
443	Touched and checked any part of the body externally 1= Yes 2=No	chbody	
444	Checked the mouth 1=Yes 2=No	Chmouth	
445	Checked with stethoscope 1=Yes 2=No	chsteth	
446	Checked blood pressure 1=Yes 2=No	chblpr	

	GENITAL EXAMINATION		
447	Inspected the penis visually 1=Yes 2=No 99= NA (patient is female)	penvis	
448	Milked the penis 1= Yes 2=No 99= NA (patient is female)	penmilk	
449	Touched and palpated groin area 1= Yes 2=No	chgroin	
450	Visually inspected the vagina with female patient lying down 1=Yes 2=No 99= NA (patient is male)	vagvis	
451	Examined the vagina with a speculum 1= Yes 2= No 99= NA (patient is male)	Vagspec	
452	Examined the vagina manually 1= Yes 2=No 99= NA (patient is male)	vagman	

SECTION 5: TREATMENT AND ADVICE/COUNSELING PROVIDED

551.	Doctor explained to the patient about the illness 1= Yes 2=No (If yes, observer to note what was explained)	tretexp	
	Doctor discussed/explained the treatment as below		
552	Explained dosage of medicine 1=Yes 2=No 99=NA (no treatment given)	expdos	
553	Explained possible side-effects 1=Yes 2=No 99=NA (no treatment given)	expside	
554	Explained conditions in which medicine should not be taken (contraindications) 1=Yes 2=No 99=NA (no treatment given)	Expcont	

555	Please rate the overall explanation by doctor (of treatment) 1 = not at all; 2 = somewhat; 3 = very well; 9 = not applicable (no medicine was given)	expover	
556.	Did a compounder explain about the treatment? 1=Yes; 2=No; 3=Not applicable	compexp	
557.	Did the doctor give medicine from his own clinic? 1 = Yes 2 = No *(Observer to check with the doctor and write down what medicine was given, how many times a day and for how many days)*	medclin	
558.	Doctor prescribed medicine (rather than gave medicine) 1= Yes 2=No *(Observers to check with the doctor and write down what medicine was prescribed, howmany times a day and for howmany days)*	medpres	
559	Doctor advised patient on how to avoid problem in the future 1=Yes 2=No *(Observers to record whatever advice was given, including advice on food habits, sexual practices, dealing with any stress or tension etc.)*	advprevn	

560	Extent to which doctor discussed condoms with the patient 1 = Did not discuss or give condoms 2 = Discussed/gave advice 3 = Provided condoms 4 = Demonstrated and provided (please note if condom disposal was discussed or not)	discond	
	Doctor discussed partner treatment:		
561	Doctor advised patient on partner treatment 1 = Yes 2 = No	partreat	
562	Doctor attempted partner notification 1 = Yes 2 = No	partnot	
563.	Overall rating of doctor's advice on partner treatment 1_____2_____3 Not at all Superficially Thoroughly	ovpatr	
564	Extent to which doctor checked patient's understanding (by asking questions or by asking the patient to repeat instructions) 1_____2_____3 Not at all Superficially Thoroughly	chepatun	
565	Doctor called for follow up 1 = Yes 2 = No *If yes, please note after how many days.*	callfu	
566	Did the doctor refer? 1 = Yes 2 = No	parefer	

567	If yes, whom was the patient referred to? 1 = another village private practitioner; 2 = a private practitioner in a bazaar 3 = a private MBBS doctor 4 = a 'sex specialist' 5 = PHC 6 = govt. hospital 7 = private hospital 8 = any other 99 = not applicable If possible, note name of provider and/or place where patient was referred	refdoc	
568	Type of payment given/asked 1 = In cash 2 = In kind (if in kind, please note what was given) 3 = both cash and kind 4 = no exchange of cash or kind took place	paytyp	
569	Amount of cash paid by patient for the treatment	cashamt	Rs.
570	Was medicine given on credit? 1 = Yes 2 = No	paycred	
571	If yes, please note how much credit was given	credamt	Rs.
572	If medicine was bought from a chemist's store, how much did the patient have to spend? (please check with the patient and note) 1 = less than Rs. 10 2 = Rs. 10-25 3 = Rs. 26-50 4 = Rs. 51-100 5 = Rs. 101-250 6 = Rs. 251-500 6 = Rs. 501 and above 9 = not applicable	chemamt	

SECTION 6: COMMUNICATION / INTERPERSONAL SKILLS OF PROVIDER

661.	FRIENDLINESS Extent to which provider: -shares/exchanges personal information or a thing to eat/drink with the patient -uses local language in all discussions -says 'namaste' etc when the patient leaves 1_____2_____3 Not at all Somewhat V.much	friendli	
662.	RESPECTFUL BEHAVIOUR Extent to which provider: -speaks respectfully -expresses respect through his body language 1_____2_____3 Not at all Somewhat V.much	respbeh	
663.	ATTENTIVENESS Extent to which provider: -listens attentively to the patient (by acknowledging what patient is saying, asking questions, looking attentive through body language) -maintains eye contact/looks at the patient while listening 1_____2_____3 Not at all Somewhat V.much	attentiv	
664.	PRIVACY Extent to which privacy of the consultation is maintained: - away from hearing of other patients - lowering voice or in any other way 1_____2_____3 Not at all Somewhat V.much	privacy	

665.	ATTITUDE OF OPENNESS Extent to which provider : - encourages patient to speak openly, frankly and honestly -speaks openly and without inhibitions himself 1_____2_____3 Not at all Somewhat V.much	openatt	
666.	JUDGEMENTAL ATTITUDE Extent to which the provider: -imposes his own biases / personal reactions / views and opinions on the patient, especially with respect to the patient's sexual practices 1_____2_____3 Not at all Somewhat V.much	judgeatt	
667.	LANGUAGE Extent to which provider uses language appropriate for the patient's comprehension, while discussing the symptoms or the disease 1_____2_____3 Not at all Somewhat V.much	lang	
668.	HANDLING DOUBTS AND QUERIES Extent to which the provider -answers patient's questions related to the disease, food and nutrition and treatment 1_____2_____3 Not at all Somewhat V.much	doubts	
669.	REASSURANCE Extent to which provider reassures patient from time to time during the interaction 1_____2_____3 Not at all Somewhat V.much	reassur	

670.	Impression that you, as an observer, have on whether: -The patient seems to be comfortable with the provider 1_____2_____3 Not at all Somewhat V.much	patcomf	
671	Impression that you, as an observer, have on whether: -The patient is comfortable with the observer's presence 1_____2_____3 Not at all Somewhat V.much	obscomf	

Section 7

771.	FINAL DIAGNOSIS MADE BY THE PROVIDER Observer, please ask provider the following question, after patient has left and please note exactly the statement given. ***In your opinion what disease or problem does this patient have?*** Then circle and write the appropriate code : 1 = Genital ulcer syndrome 2 = Male urethral discharge 3 = Vaginal discharge 4 = Lower abdominal pain/pelvic infection 5 = Syphilis/Chancroid/Herpes 6 = Gonorrhea or Chlamydia 7 = Mental stress/depression 8 = Warts 9 = Any other 10 = UTI	findiag	

Name of the observer	
Signature of the Observer	
Date of observation	
Signature of person checking the form	
Date of checking the form	
Time of checking the form	

APPENDIX 9 - EXIT INTERVIEW

EXIT INTERVIEW

11	Code number of the Interviewer (Interviewer =IR)	Intcode	

SECTION 1: PERSONAL INFORMATION

111	What is your educational attainment/qualification? OR, Up to what level have you studied? (Check NFHS categories) 1= Never been to School; 2= up to class V; 3= Class V - VIII ; 4= Class XI-XII ; 5= Graduate and above	patedu	
112	What is your current profession/occupation? 1= Homemaker; 2= Farming; 3=Artisan; 4= Unskilled Labour; 5= Hotel / small dhaba etc.; 6= Armed Forces; 7= Any other (please specify) *(codes were revised later)*	selfocc	
113	What occupation does your spouse follow currently? 1 = Homemaker; 2= Farming; 3=Artisan; 4 = Unskilled Labour; 5= Hotel / small dhaba etc.; 6 = Armed Forces; 7= Any other (please specify) 9 = Not applicable	spsocc	
114	What is your approximate family income? Monthly Yearly	income	Rs. Rs.
115	What is the approximate distance between your home and this clinic? (in kms)	disthom	kms

116.	How did you travel to this clinic? 1=On foot; 2= On a cycle; 3= By scooter/ motor cycle 4= By tempo/auto/ local diesel vehicle (jugad)/tractor/jeep 5= By bus/truck 6= any other	clintrav	
117.	How long did it take you to reach this clinic? 1= less than 5 mts. ; 2= 5-15 mts. ; 3= 16-30 mts 4= 31 mts- 1 hour ; 5= more than 1 hour	clintim	
118.	How much did it cost you to travel to this clinic? 1= nothing ; 2= less than Rs. 5 ; 3= Rs. 5-10 4= Rs. 11-20 ; 5= Rs. 21=30 ; 6= Rs. 31-50 7= more than Rs. 50	trvcost	
119	How long did you have to wait in this clinic before you could meet the doctor? 1= not at all; 2= less than 5 mts; 3= 5-15 mts. 4= 16-30 mts.; 5= more than 30 mts.	clnwait	

SECTION 2: HEALTH CARE SEEKING

221.	Did you seek treatment for this symptom/problem anywhere else, before coming here? 1 = YES 2 = NO IR: If the answer to Q.2.2 is No, then skip the next set of questions 222 to 230, and proceed to Q. 231	othtreat	
222.	If yes, we would like to talk to you about ALL your previous care seeking for this problem, before coming to this provider and also what treatment you received at each of those sources? Could you please tell us who you sought care from the first time? **Interviewer to first write down the answer verbatim, below:** …… …… **Then, refer to CODE SET 1 to fill in the correct code for answer**	trone	

223.	What medicines or treatment did you receive from that (first) provider? **Interviewer to first write down the answer verbatim, below:** …… …… **Then, refer to CODE SET 2 to fill in the correct code for the answer**	medone	
224.	Tell us three important reasons why you went to that first provider for treatment? Please refer to CODESET 3 and fill in the correct code for the answer	resone	
225.	Who did you seek care from next? **Interviewer to first write down the answer verbatim, below:** …… …… **Then, refer to CODE SET 1 to fill in the correct code for the answer**	trtwo	
226.	What medicines or treatment did you receive from that second provider? **Interviewer to first write down the answer verbatim, below:** …… …… **Then, refer to CODE SET 2 to fill in the correct code for answer**	medtwo	
227.	Tell us three important reasons why you went to that second provider for treatment? Please refer to CODESET 3 and fill in the correct code for the answer	retwo	

228.	Who did you seek care from next? **Interviewer to first write down the answer verbatim, below:** …… …… **Then, refer to CODE SET 1 to fill in the correct code for the answer**	trthree	
229.	What medicines or treatment did you receive from that third provider? **Interviewer to first write down the answer verbatim, below:** …… …… **Then, refer to CODEST 2 to fill in the correct code for the answer**	methree	
230.	Tell us three important reasons why you went to that third provider for treatment? Please refer to CODESET 3 and fill in the correct code for the answer	rethree	
231.	Who made the decision for you to come to this particular "doctor"? 1 = Self ; 2 = Spouse; 3 = A family member 4 =Friend/neighbour 5 = Any other (Specify)	trdec	
232.	Why did you choose to come to this particular doctor for this problem. Can you please tell us three main reasons? Please refer to CODESET 3 and fill in the correct code for the answer	trreas	

CODESET 1: PROVIDER CODES

01 = a herbalist;
02 = RMP/other certificate holder in small village;
03 = uncertified practitioner in small village
04 = uncertified practitioner in large bazaar
05 = RMP/other certificate holder in large bazaar
06 = qualified ISM in large bazaar
07 = qualified allopathic (MBBS/MD) doctor
08 = PHC/CHC doctor
09 = govt. ANM
10 = govt. hospital
11 = private hospital
12 = any other
99 = not applicable

CODESET 2: MEDICINE OBTAINED

1 = herbal
2 = allopathic (angrezi)
3 = ayurvedic/unani/homeopathic
4 = mixed 1 and 2
5 = mixed 2 and 3
6 = don't know/can't say
9 = not applicable

CODESET 3: REASONS FOR CHOICE OF CARE SEEKING

01 = Close-by and accessible;
02 = Always available
03 = Is famous and highly reputed
04 = Always seek treatment from him;
05 = Known to me/us
06 = Provides good medication, relief is quick
07 = Was advised by someone to see him
08 = Deals with patients in a pleasing manner
09 = Speaks our language
10 = Gives inexpensive medicine
11 = Gives medicine on credit
12 = Maintains confidentiality and privacy
13 = Makes home visits when necessary
14 = Others (Please specify)
15 = Don't Know/can't Say
99 = not applicable

233.	Could you please tell how you will use the medicine that has been given to you by this doctor?				
	Name or description of the drug (eg: blue pills)	Method of using it (swallow, apply/ massage etc)	How many at a time?	In what frequency? Or how many times a day?	For how many days?
234.	Interviewer, please confirm with doctor if respondent's explanations, as noted in the above columns, match with the doctor's prescription. 1 = Yes 2 = No 9=NA if no medicine was given				medcon
235.	We would like to know your opinion on the service that you received in this clinic and the treatment that you were given. Could you please share with us one positive aspect of your experience that left you feeling highly satisfied. (IR: please record respondents answer in detail, verbatim) … … … …

APPENDIX 10- GHQ-12 (GENERAL HEALTHQUESTIONNAIRE)

We should like to know if you have had any medical complaints and how your health has been in general over the past few weeks.

HAVE YOU RECENTLY :-

1)	Been able to concentrate on whatever you're doing?	0 Yes	1 No
2)	Lost much sleep over worry?	0 No	1 Yes
3)	Felt that you are playing a useful part in things?	0 Yes	1 No
4)	Felt capable of making decisions about things?	0 Yes	1 No
5)	Felt constantly under strain?	0 No	1 Yes
6)	Felt You could overcome your difficulties?	0 Yes	1 No
7)	Been able to enjoy your normal day-to-day activities?	0 Yes	1 No
8)	Been able to face up to your problem?	0 Yes	1 No
9)	Been feeling unhappy and depressed?	0 No	1 Yes
10)	Been losing confidence in yourself?	0 No	1 Yes
11)	Been thinking of yourself as a worthless person?	0 No	1 Yes
12)	Been feeling reasonably happy, all things considered?	0 Yes	1 No

APPENDIX 11 - Staff training for laboratory procedures and details of procedures

Venue:

Christian Hospital, Chamba.
Field, Tehri Garhwal.

Date:

11th October, 2002 to 12th October, 2002.

Trainers:

Auroprobe Laboratories
Dr. Bawa, Mr. Ashok Yadav, Mr. Sanjay Singh, Mr. Sandeep, Mr. Arshad, Mr. Adnan, Mr. Raja.

Objectives:

The objective of this program was:

- To train field and technical staff for the proper collection and transportation of specimens from the field to the center.

Methods of training:

The training program consisted of lectures, demonstrations both at the center and in the field.

- The 1st day of the training program consisted of lecture on the background of the project. Then SOP was discussed in detail, kit bags were made for the field workers and sample collection was demonstrated to the workers followed by mock exercises for the same.
  The 2nd day of training program was devoted to observing the field staff take the specimens from the patients in the field. At the end of the day five samples were collected from the field - 3 vaginal swabs and 2 urine specimens.
- The overall observations indicated that field staff was educated, highly skilled and able to grasp and execute correct methods for sample collection, processing, storage & transportation. Each member of the field staff was individually made to collect at least one

sample from the field under the observation of Dr. Bawa/Dr. Goel. Overall very few mistakes were made.

A MCQ test was given to all the participants as an assessment of the training outcome. All participants performed well in the assessment test.

Recommendations:

The staff is trained adequately for the study and the study can commence.

GUIDELINES FOR COLLECTION & TRANSPORTATION OF SAMPLES

IN THE FIELD

MALES:

Specimen:

First void urine.

Materials required

One 100 ml urine collection container.

Zip lock bags.

Labels.

Disposable gloves.

Cello tape.

Thermocol box.

Packing tape.

OHP Markers.

Scissors

Procedure:

The FVU is to be collected by the patient in a sterile 100ml wide mouth urine collection container. It is important to instruct the patient to really provide the very first portion of his urine, and not more than 40 ml (= filling not more than half of the container). The patients should not have passed urine for 2 hours before providing the FVU. If necessary try to keep patient waiting for 90 minutes (after getting his collaboration by explaining why this waiting is necessary).

Tightly screw the 100 ml urine container and seal it with the packaging tape provided, to ensure that there is no leakage from these containers during transportation.

Label the 100 ml container with the patient lab no. and then fix the label with cellotape to prevent it from peeling off during transportation. Place this 100 ml containers in a zip-lock bag

and zip the bag tightly. Place this zip-lock bag in cold thermocol box with gel packs. For instruction of packaging this zip-lock bags in the thermocol boxes, please refer the label on thermocol box. This thermocol box containing samples will be transported to the center.

The Health Care Worker should wear gloves all the times while handling the specimens.

FEMALES

(A) Specimen:

One Self Administered High Vaginal Swab (SAHVS) with 1 Dacron swab.

Two Self Administered High Vaginal Swabs (SAHVS) with 2 cotton swabs.

(B) Consumables required for processing of specimen

One sterile dacron swab for taking vaginal swab.

Two sterile cotton swabs for taking vaginal swab.

Two slides for making smear.

Labels.

One 2 ml screw cap container containing Kalon buffer.

Glass marker.

One slide box (for 25 slides)

Disposable gloves.

Thermocol box.

Container with sterile saline

Spirit lamp

Zip-lock bag

Scissors

One 2 ml container

One match box.

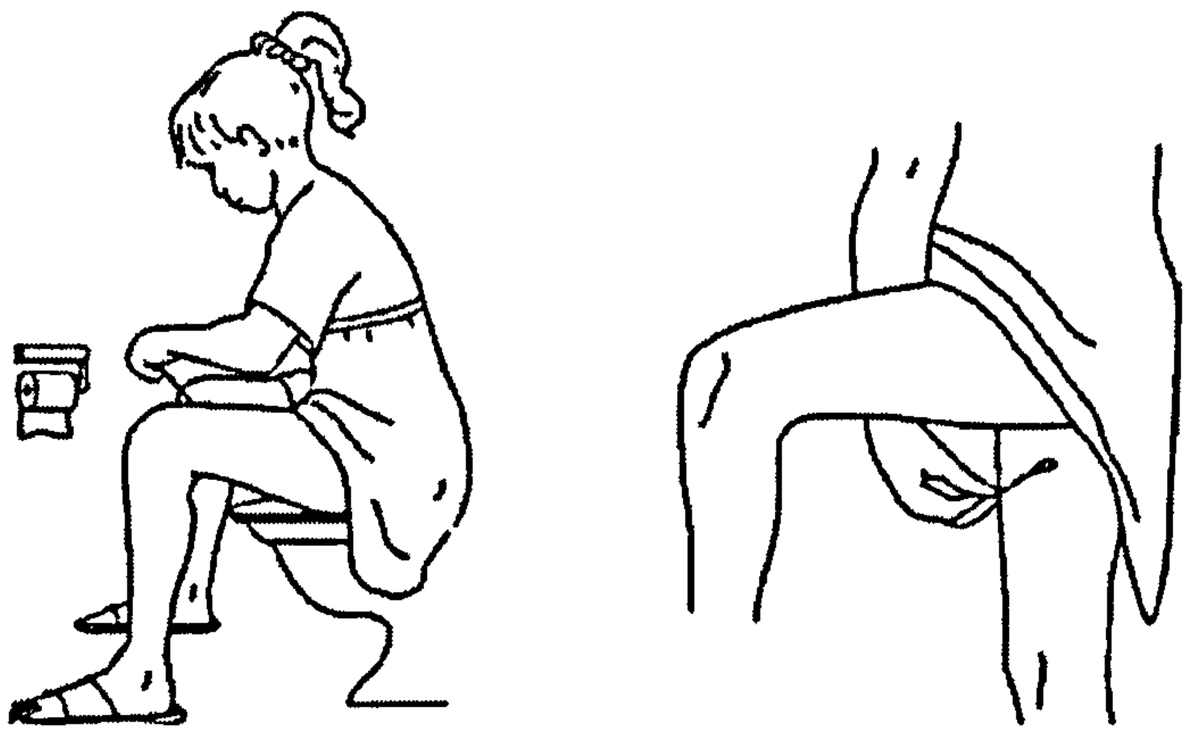
(C) Procedure

Woman will be asked to provide three SAHVSs in the order described below.

First SAHVS should be collected with the help of sterile dacron swab.

Second SAHVS should be collected with the help of sterile cotton swab.

Third SAHVS should be collected with the help of a separate sterile cotton swab.
SAHVS is obtained by insertion of the sterile cotton swab into the vagina past the labia to distance of about 6 cm (1/2 swab length), held in that position to a count of 10 and rotated once before return to the transport case by the patient. Please refer to figure given below.
If the vagina is dry women should be asked to moisten the swabs using the little bottle with sterile saline water provided. This would help to insert the swabs easily in that case.



Explain the procedure of collecting self-adminstered vaginal swabs carefully to the patient. Provide her with the three swabs you unpacked and put upside down in a firm container (such as a mug or cup). Request the patient not to touch the tip of the swabs and to insert each swab back into the container after use. Point at the Dacron swab and emphasise that this needs to be used first. Offer help and assistance if the patient wants to be helped.

After receiveing the container with the three used swabs, procede as follows:
The first swab (Dacron), should be inserted in the sterile 2 ml screw cap container. The tip should not quite reach the bottom of the screw cap container. The stem of the swab should now be broken. The tip will fall into the container and fit into it. Screw the container tightly. Label the container with the patient's individual lab number.

Place the 2 ml container into the zip lock bag and then immediately put this container into the cold thermocol box.

The second SAHVS, collected with the help of the sterile cotton swab, should be used to make a smear on a slide. The smear should be made by rolling the swab gently on the slide to cover an area of about 1 x 1 cm^2. The smears should be air dried and heat fixed using a spirit lamp. The slide should be fixed by passing it over the flame three times. Label the slide with the patient's lab number. Place the slide in the slide transport box provided.

The third SAHVS should be put in Kalon buffer in a 2ml container, mixed vigorously without spilling the buffer fluid and squeezed against the walls of the 2 ml container to expel the contents of the swab into the buffer. Discard the swab after this. Store Kalon buffer container in thermocol box to be transported to the lab in Tehri.

The thermocol box and the slide box should be transported to the center.

AT THE TEHRI LAB.

EQUIPMENTS REQUIRED-20° Freezer.

Centrifuge with closed cups to spin upto 3,000 rpm.

50 ul fixed volume pipette.

MALES

(A) Materials received from the HW:

Thermocol box containing one or more 100 ml container(s) with urine.

Inspect the thermocol box and note down the sample condition. The lab technician should observe and document the following parameters.

- Thermocol box temperature.
- Any leakage of the sampled urine
- Proper labeling of the lab number.

Place it in the -20°C deep freezer immediately, later to be transported to Auroprobe Laboratories in cold thermocol boxes.

FEMALES

(A) MATERIALS RECEIVED FROM THE HW

Thermocol box containing one dacron swab in a 2 ml container from each patient, and one 2 ml container containing Kalon buffer, again from each patient.
Plastic slide box (for 25 slides) containing one slide from each patient .

(B) Consumables required for processing of specimen

Kalon test kit for TV Agglutination test.
50 ul fixed volumes pipette, 50 ul tips.
Plastic slide box (for 50 slides)
Gloves
Thermocol box
Scissors

(C) Procedure

Place the 2 ml containers containing the dry dacron swab tips immediately at –20°C, later to be transported to Auroprobe Laboratories in thermocol boxes.
Place the slide in the plastic slide box provided. Send the slide box with slides to Auroprobe Laboratories later, to be Gram stained for Bacterial vaginosis.
Shake the the 2 ml containers containing a specimen in Kalon buffer. Perform the Kalon test on these speciemens according to the instruction booklet. Thereafter store the container with the remainder of the Kalon buffer after use in freezer. Send these containers later to Auroprobe Laboratories (for quality control)

APPENDIX 12- GHQ TRAINING

Training Session for the Tehri and Agra Project Field Staff of GCDWS in GHQ-12 and related concepts in mental health

Institute of Human Behaviour & Allied Sciences(IHBAS) , Delhi
(27th October,2002)

Resource Person : Dr. Nimesh G. Desai
Senior Scientific Advisor: Dr. Deoki Nandan
Study Coordinator: Ms. Meenakshi Gautham

Participants:

16 field research assistants from Agra and Tehri Garhwal (8 male, 8 female)

Field Research Managers: Ms. Rajkumari Singh (Tehri), Ms. Shraddha Dwivedi (Agra)

Learning Objectives:

At the end of the training session, participants should be able to

(1) List the common features of Depression & other Common Mental Disorders.

(2) Describe the links between Physical health or ill health and psychological symptoms.

(3) Explain the reasons for inclusion of a psychological component in the Project, and the usefulness and justification for the use of a screening instrument.(GHQ-12)

(4) Demonstrate competency in administration of GHQ-12, specifically in

(a) The skills in the verbal and the non-verbal spheres for administering the items of GHQ-12

(b) The words and phrases in the local language and dialect for the items of GHQ-12

(c) The techniques for dealing with difficulties in the administration of GHQ-12

Training Outline

1:00 - 1:15 pm	Opening Remarks - *DR. DEOKI NANDAN*
1:15 - 2:00 pm	Getting Acquainted - *Ms. Meenakshi Gautham &* - *Dr. N. G. Desai*
2:00 - 2:15 pm	Reviewing objectives and purpose of the training - *Dr. N. G. Desai* - *Ms. Meenakshi Gautham*
2:15 - 3:00 pm	Introduction to Basic Concepts in Mental Health & Features of Depression & the other common Mental Disorders (CMDs) - *Dr. N. G. Desai*
3:00 – 3:15 pm	Break
3:15 – 4:00 pm	The relationship between physical and psychological health; physical presentations of psychological ill health, psychological causes. - *Dr. N. G. Desai* The relevance to the Project - *Ms. Meenakshi Gautham*
4:00 - 4:30 pm	Exploring the assessment techniques in mental health - *Dr. N. G. Desai*
4:30 – 5:00 pm	Introduction to the GHQ-12 and its items - *Dr. N. G. Desai*
5:00 – 5:30 pm	Small Group Exercises for GHQ-12 administration
5:30 – 5:45 pm	BREAK
5:45 –6:30 pm	Discussion of the experiences & the difficulties - *Dr. N. G. Desai & Ms. Meenakshi Gautham*
6.30 – 7:00 pm	Role Play for Administration of GHQ-12 - *Dr. N. G. Desai*
7:00 – 7:30 pm	Wrap Up Session for Clarifications & Discussion - *Dr. N. G. Desai & Ms. Meenakshi Gautham*

Observations & Recommendations

1. The Hindi version of the GHQ was reviewed with the two teams from Agra and Tehri. A common observation was that the questions in their current form would pose comprehension difficulties for the rural respondents in both districts. Through further review and discussion, all of the difficult words and phrases were identified and simplified. The essential meaning of each question was clarified with the teams to ensure that even if each question needed to be further simplified and explained to respondents in the field, there would be no deviations from the essential content.

Recommendation:
The above simplified version will be piloted further in both districts and reviewed once again before final usage.

2. The final cut off score could not be decided in time for sharing in the present training. 2 is the internationally accepted cut off score, but a few Indian studies have used higher scores as well.

Recommendation:
An acceptable cut off score needs to be agreed to and related issues (mainly related to referral) discussed before the GHQ is finally used in the field.

ADDENDA

A few days after the training, on 1-11-02, the simplified version of the GHQ was pre-tested in Agra and then in Tehri in a village location. A discussion on the technical difficulties in administration and a demonstration by Dr. Desai were followed by supervised administration of the GHQ by all the field research assistants (RAs). Later, observations were discussed, feedback was provided to each individual RA and role plays were conducted to further refine their GHQ interviewing skills.

Main observations:

1. Administration of the GHQ can evoke different responses amongst those being interviewed. As seen practically, these included: a) silence or resistance, b) sudden release of emotions and problem sharing at an intense level, c) giggling, d) inadequate comprehension, e) a desire to seek solutions from the interviewer. The team were provided some tips on how to deal with these situations.

2. The team was exposed to one case of high GHQ positivity, who was visibly in need of immediate and specialised help. Although a referral source was suggested to her, such scenarios and others, with or without any biological etiology, will need to be foreseen, discussed amongst all the project partners, and guidance provided to the teams on best ways of managing each of these.

Recommendation: MG to schedule a meeting of all project partners and Dr. Desai to discuss and find best possible solutions to field issues surrounding the GHQ.

APPENDIX 13 – INFORMED CONSENT SHEETS

INFORMED CONSENT FORM FOR PATIENTS

- *Purpose*

Hello, my name is ... .and I have come from the Agra Medical College / Christian Hospital at Chamba / Tehri Garhwal. We are collecting information on reproductive health problems of men and women with the purpose of improving the treatment that they get at the first point of care-seeking. It seems that your doctor believes that you may have such a problem.

- *Procedures to be followed*

If you agree to participate in this study, I will sit on the side and observe what goes on between between you and your doctor. I would like to listen to your conversation and observe any examination he may do and the treatment he may provide. After you have been treated, I will ask you a few simple questions related to the treatment. I will also ask you for a small urine specimen/ a self-administered vaginal swab that will be examined in a laboratory and will help to determine the best treatment for you. These are very easy procedures and will not cause you any discomfort. I will be here to help you if you like. Once we get the laboratory results, and if you are found to have an infection of your private parts, we will come back to you, if you agree, to offer you free treatment and also help you to discuss the problem with your partner and invite your partner for free examination and treatment (if you are willing that we do so). We will contact you at a place and through a follow up method of your choice (through providers or directly).

- *Discomforts and risks*

You may feel uncomfortable that I as a stranger observe the discussion between you and your doctor, or because of some of the questions that I am going to ask. I want to assure you that I will keep all information strictly confidential and that your name will not be given by me to any of your family or community members.

There are no risks associated with any of the suggested procedures. In the extremely unlikely situation that you receive an injury due to the vaginal swab, medical care is available at our hospital, which is located not more than 6 hours by car away from this place. In such case we will help you to get transport to the hospital and immediate access to treatment.

The drugs we are going to offer you in case you have an infection are recommended by the Government of India. They usually have no side effects. In case you experience a side effect, a medical worker will be there to treat you.

- *Benefits*

You will receive free diagnosis and treatment once your tests tell us what infection you have. Through this study, the medical authorities will get useful information on better ways of treating infections of the private parts through private informal providers such as the one you like to seek care from. This is likely to also improve the health in your community in the long run.

- *Duration of procedures and study*

This study as such will last until July 2003. Your own involvement is only today. In case the laboratory detects that you have an infection, a medical worker will come back to you or approach you through your provider within the next 4 weeks to offer you treatment.

- *Compensation*

You will not have to pay any money for participating in this study, neither will you be paid any money.

- *Whom to call in an emergency*

If any unexpected emergency arises in association with the vaginal swab or related to your treatment following testing and diagnosis, you may contact me / the treatment providing medical doctor/worker immediately. We will stay in the village at least for several hours after the swab is taken / the treatment is given. You can also contact Dr. Deokinandan at 0562 – 215 111/215 222 or Dr. Rajesh Singh at 01376 - 55273

- *Offer to answer questions and freedom to withdraw from study*

I will be happy to answer any questions you may have about any of these procedures. You are free to withdraw your consent to participate in this study at any time if you like. If you withdraw your consent, you will not have any disadvantages, and your usual doctor will take care of you as always.

- *Confidentiality*

The information that we obtain in this study will be used only in a form that cannot be identified with you. These records will be fed into a computer with no names, only code numbers. The sheet that is with me will be kept under lock and key and only my immediate colleagues and I will have access to it. All information will be kept strictly confidential and not shared with unauthorized persons. Your laboratory results will be available to the doctor in our hospital and to the medical worker who will come to offer treatment in case you have an infection. Even if national and international agencies request access to medical records, your identity will remain confidential. A representative of our sponsoring organisation may in fact like to interview you to make sure that you are clear about the nature of this study and that you have given your voluntary consent to participate in this study. If an interview is requested, you have the option of accepting or declining, and if you accept, again all information will be kept confidential.

Investigator's signature with date: _____

INFORMED CONSENT FOR PROVIDERS (AT THE TIME OF MAPPING TO OBTAIN PRELIMINARY CONSENT)

Hello, our names are ... .and we have come from the Agra Medical College/Christian Hospital at Chamba, Tehri Garhwal. We are collecting information on community level care that is available to men and women in rural communities for their reproductive health problems. We are doing this in order to improve existing health services at the community level.

We want to ask for your consent to include you in this study and to do so we would like to orient you to all the procedures in this study so that you can decide to participate or not to participate. We will select our final sample of providers from all those of you who are willing to participate. Even though all those of you who are willing, may not be finally selected, you will still benefit from the expected long term outcomes of this study in that the quality of care provided by you can potentially improve and both you and your patients will benefit from that improvement.

If you agree to participate in this study, we will ask you some questions regarding your work and how you treat patients who have problems with their private parts. We would like to work with you for a few days, in order to observe the interaction between you and 3 to 5 of your male and 3 to 5 of your female patients who come to you with reproductive and sexual health problems. If the patient is female, a female observer will stay around, if the patient is male, a male observer will be there. We will be sitting calmly and will not interfere with your work, but we can discuss any questions afterwards, if you want.

We would also like your help to gain initial consent from these patients, using guidelines that we give you, so that they can be included in the study, and we will only include them if you and they agree. After you have treated them as usual, we will be interviewing them as well about their illness and the treatment given by you. We will then ask the male patients for urine specimens and female patients for vaginal swabs that they can obtain themselves. These specimens will be tested in the laboratory to confirm whether they have an infection so we can provide them with additional treatment if they are infected. The results of the tests will be shared with you if the patient agrees and we will offer the patient free treatment should he/she test positive. There are usually no risks associated with any of these procedures. In the very unlikely case that a patient is hurt from the soft vaginal swab or experiences a side effect from the drugs that may be provided if the patient is infected, we will help the patient to get medical care as quickly as possible.

You may also be selected for a pilot intervention project to improve the quality of RTI/STI care available to men and women in rural communities. This will probably involve training and other assistance given after the training, if you happen to be selected.

Everything you discuss with us will be confidential and we will not put any names or other information that could identify you from any of our records or reports.

Please feel free to agree or disagree to participate in this study. If you do not agree, you will not have any disadvantages.

No one will charge you any money or pay you any money for participation in the study.

You can withdraw from the study at any time without that this will lead to any disadvantages for you. The same applies to your patients.

This study will last until July 2003. Your own involvement will be for about two weeks. In case the laboratory detects that a patient of yours has an infection, and if the patient has agreed, a medical worker will come back within the next 4 weeks to offer treatment to the patient and the sexual partner.

If you have any questions, you may ask us at any time, or call Dr. Deokinandan at 0562 215 111 at Agra Medical College or Dr. Rajesh Singh at 01376 55273 at Christian Hospital, Chamba.

INFORMED CONSENT FOR PROVIDERS (AT THE CLINIC)

Hello, I hope you remember us. Our names are .... .and we have come from the Agra Medical College/Christian Hospital at Chamba, Tehri Garhwal. We would like to remind you that you consented to participate in our study at the orientation on.... ..(date). We will once again go through all the important information related to our study so that we can have your signed agreement to be our participant.

We are collecting information on community level care that is available to men and women in rural communities for their reproductive health problems. We are doing this in order to improve existing health services at the community level.

We want to ask for your consent to include you in this study. If you agree to participate in this study, we will ask you some questions regarding your work and how you treat patients who have problems with their private parts. We would like to work with you for a few days, in order to observe the interaction between you and 3 to 5 of your male and 3 to 5 of your female patients who come to you with reproductive and sexual health problems. If the patient is female, a female observer will stay around, if the patient is male, a male observer will be there. We will be sitting calmly and not interfere with your work, but we can discuss any questions afterwards, if you want.

We would also like your help to gain consent from these patients, using guidelines that we provide you, so that they can be included in the study, and we will only include them if you and they agree. After you have treated them as usual, we will be interviewing them as well about their illness and the treatment given by you. We will then ask the male patients for urine specimens and female patients for vaginal swabs. These specimens will be tested in the laboratory to confirm whether they have an infection so we can provide them with additional treatment if they are infected. The results of the tests will be shared with you if the patient agrees and we will offer the patient free treatment should he/she test positive. There are usually no risks associated with any of these procedures. In the very unlikely case that a patient is hurt from the soft vaginal swab or experiences a side effect from the drugs that may be provided if the patient is infected, we will help the patient to get medical care as quickly as possible.

You may also be selected for a pilot intervention project to improve the quality of RTI/STI care available to men and women in rural communities. This will probably involve training and other assistance given after the training, if you happen to be selected.

Everything you discuss with us will be confidential and we will not put any names or other information that could identify you from any of our records or reports.

Please feel free to agree or disagree to participate in this study. If you do not agree, you will not have any disadvantages.

No one will charge you any money or pay you any money for participation in the study.

You can withdraw from the study at any time without that this will lead to any disadvantages for you. The same applies to your patients.

This study will last until July 2003. Your own involvement is only this week and probably the next. In case the laboratory detects that a patient of yours has an infection, and if the patient has agreed, a medical worker will come back within the next 4 weeks to offer treatment to the patient and the sexual partner.

If you have any questions, you may ask us at any time, or call Dr. Deokinandan at 0562 215 111 at Agra Medical College or Dr. Rajesh Singh at 01376 55273 at Christian Hospital, Chamba

INFORMED CONSENT FOR COMMUNITY MEMBERS (FOR FGDS AND HOUSEHOLD INTERVIEWS)

Hello, my name is ... .and I have come from the Agra Medical College / Christian Hospital at Chamba, Tehri Garhwal. We are collecting information on health problems of men and women with the purpose of improving the treatment that they get at the first point of care-seeking. We would like to know from you where men and women in your community generally go to seek health care, especially for problems of a reproductive nature, reasons for these and what are their expectations from their providers.

I want to ask for your consent to include you in this study. If you agree to participate in this study, we will hold a group discussion with you/ ask you questions related to your health care seeking. Everything you discuss with us will be confidential and we will not write down your name or any other information that could identify you from any of our records.

This study will last until July 2003. Your own involvement is only today.

Please feel free to agree or disagree to participate in this study. If you do not agree, you will not have any disadvantages.

No one will charge you any money to participate or pay you any money if you agree to participate. You can withdraw from the study at any time.

If you have any questions, you may ask me at any time, or call Dr. Deokinandan at 0562 215 111 at Agra Medical College or Dr. Rajesh Singh at 01376 55273 at Christian Hospital, Chamba.

SUBJECTS' STATEMENT WITH
DATE:_____

*Investigator's signature with date*_____

INFORMED CONSENT FOR INTERVIEWEES OF THE FREE-LISTING

Hello, my name is ... .and I have come from the Agra Medical College / Christian Hospital at Chamba, Tehri Garhwal. We are collecting information on health problems of men and women with the purpose of improving the treatment that they get at the first point of care-seeking. We are especially interested in problems associated with the private parts, how these are perceived and how people refer to these in local terminology.

I want to ask for your consent to talk to you for about 15 minutes. If you agree I will ask you to think of a few symptoms of problems that men and women may have in their private parts and how they refer to these. We need this basic understanding before we can gather more information on how people seek care for these problems and what kind of care they obtain.

Everything you discuss with me will be confidential and I will not write down your name or any other information that could identify you from any of our records.

Please feel free to agree or disagree to participate. If you do not agree, you will not have any disadvantages.

No one will charge you any money to participate or pay you any money if you agree to participate. You can withdraw from the discussion at any time.

If you have any questions, you may ask me at any time, or call Dr. Deokinandan at 0562 215 111 at Agra Medical College or Dr. Rajesh Singh at 01376 55273 at Christian Hospital, Chamba.

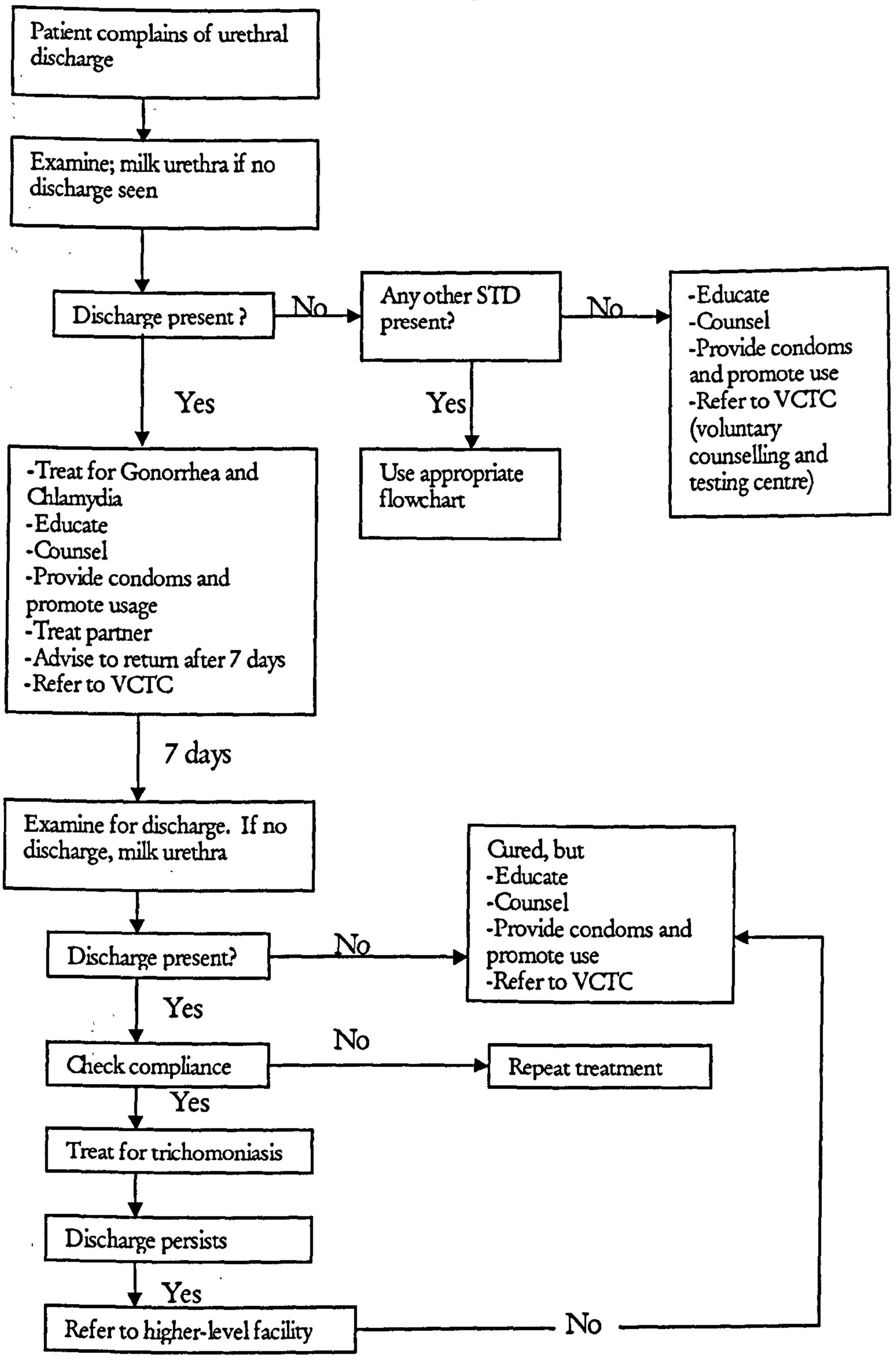
SUBJECTS' STATEMENT WITH
DATE:_____

*Investigator's signature with date*_____

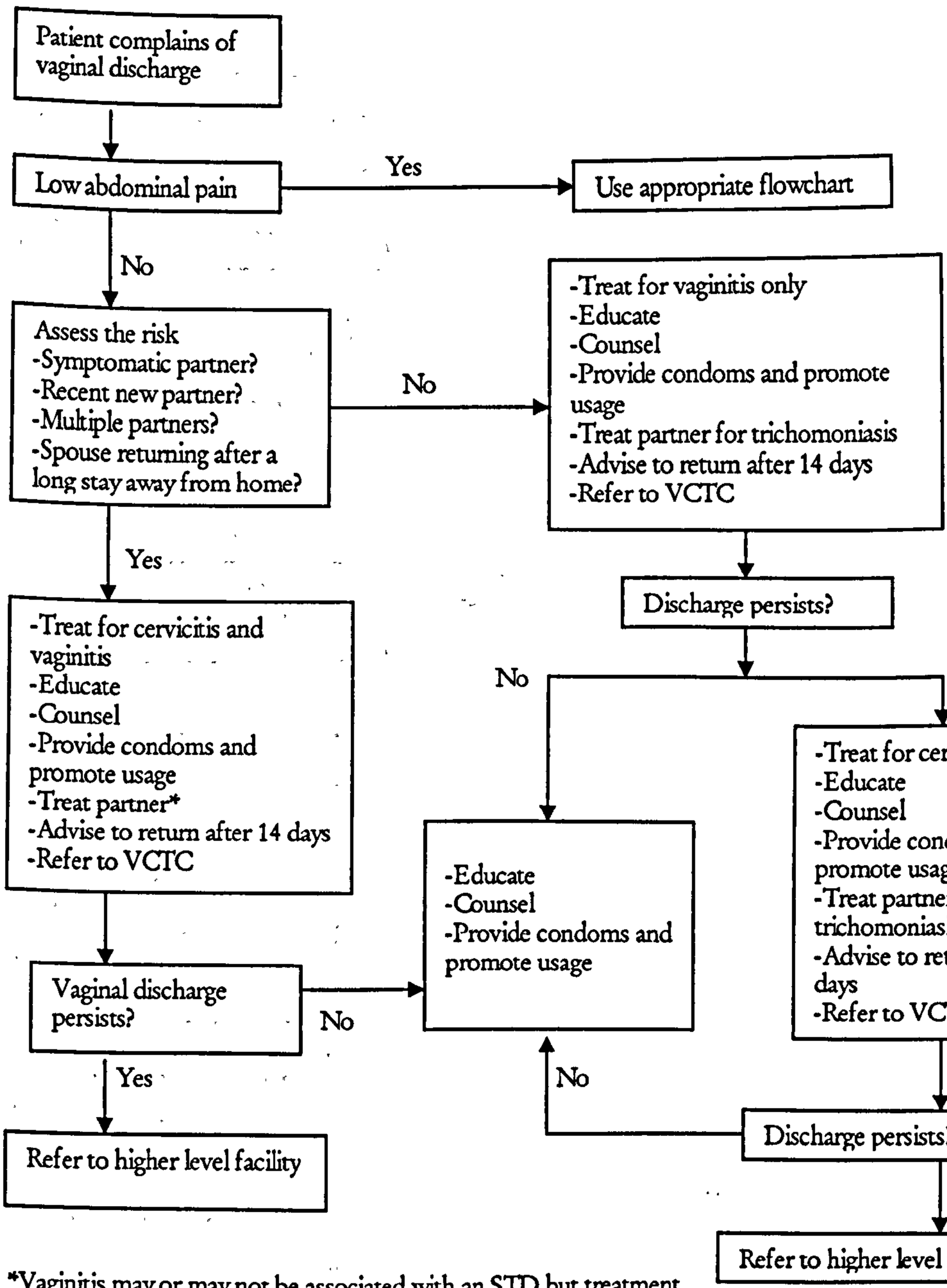
INFORMATION SHEET FOR PROVIDERS TO OBTAIN INITIAL CONSENT FROM PATIENTS

As your trusted provider, I would like you to consider a request that I have. Some people from the Agra Medical College/Christian Hospital are here to gather information on people's health problems in our community and the kind of treatment that is available to them. They want this information because they would like to help us, both providers and patients, have access to better care and get well quicker. They are especially interested in the kinds of problems that men and women have in their private parts, as health care for these problems is even more inaccessible than for general health problems. The gentleman/lady sitting outside would like to observe our consultation and ask you a few questions afterwards. He/she will also help me give you the right treatment by taking a small sample from you for testing in a lab. This way you will be cured effectively. If you agree to participate in this study I will ask this person (name... ..) to come in and he/she will give you a clearer explanation of what they will do and how they will use the information that they collect from us and from many other doctors and patients like us, all over the district.

Appendix 14 - Syndromic management flowchart
SYNDROME URETHRAL DISCHARGE

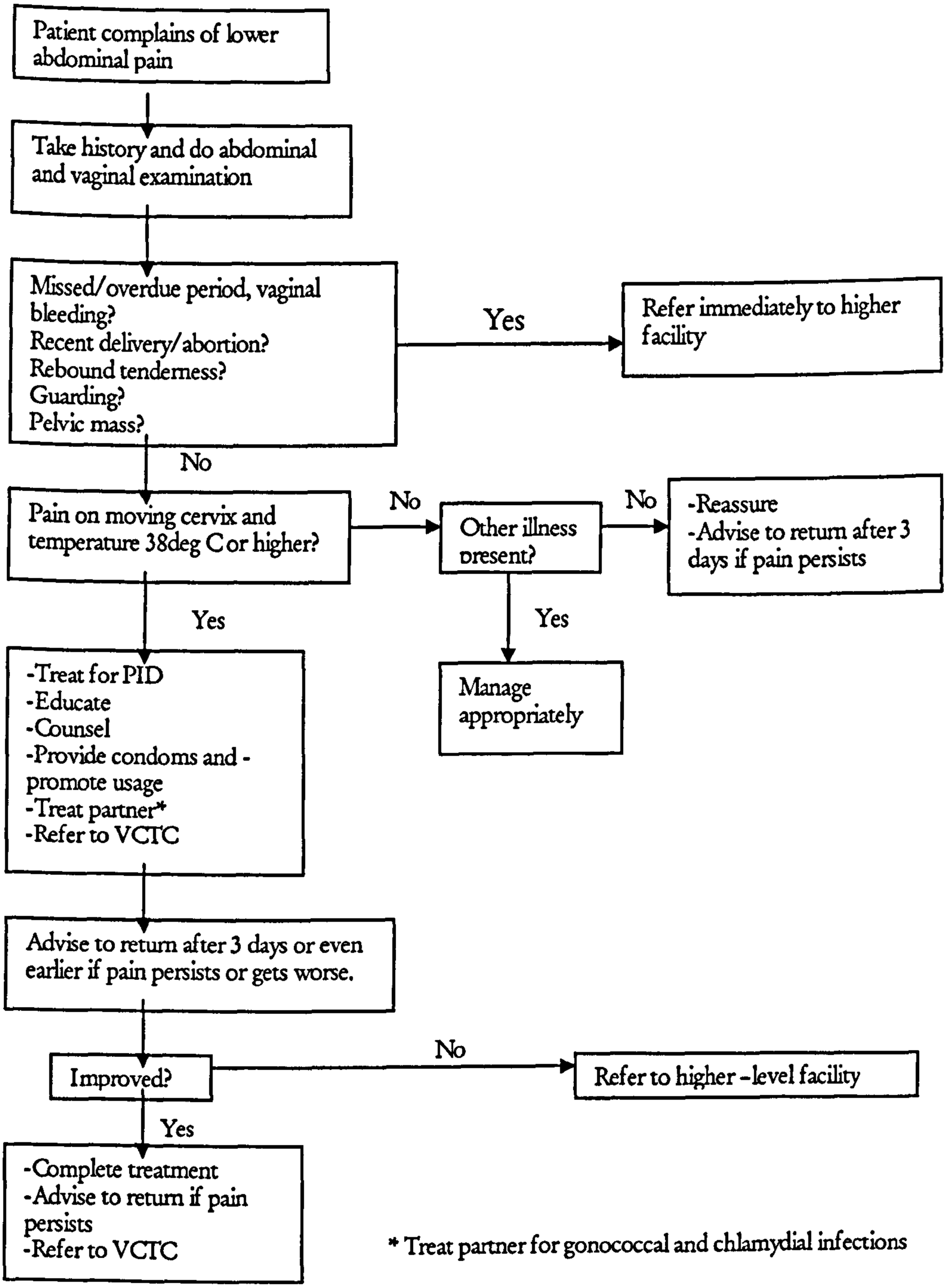


Appendix 15 -Syndromic management flowchart
SYNDROME VAGINAL DISCHARGE (without speculum examination)



*Vaginitis may or may not be associated with an STD but treatment of the partner may be helpful. Treat partner for gonococcal, chlamyidial and trichomonal infections.

Appendix 16 -Syndromic management flowchart
SYNDROME LOWER ABDOMINAL PAIN IN WOMEN



* Treat partner for gonococcal and chlamydial infections